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THE LAMIINÆ OF NORTH AMERICA.

BY CHARLES W. LENG, B.S., WITH NOTES AND DESCRIPTIONS BY JOHN HAMILTON, M.D.

After spending much time and bestowing much labor on the present work, Mr. Leng was compelled to abandon its further prosecution by causes beyond his control. All work done was placed in the hands of the writer to use as might be thought best. Mr. Leng had the paper prepared for the press as far as *Leptostylus*, and that part is published from his manuscript. From *Leptostylus* onward the most of the tables, bibliography and distribution, were furnished by Mr. Leng. What remained to be done was the completion of these and the furnishing of descriptive notes under the species; this is represented in the text by the matter inclosed in square brackets. The writer is responsible for all following the close of the synopsis proper, being notices of synonymy and species introduced or described since 1884, the date of the commencement of the synopsis of the Cerambycidæ. As this paper is likely to fall into the hands of many who have not access to detailed systematic descriptions, to make it useful to such the salient features of each species are given, being taken from the insects themselves, except when not obtained.

JOHN HAMILTON.

ALLEGHENY, PA.,
March 18, 1896.

Preliminary Remarks by Mr. Leng.

Since 1767, when Linné described *Lagocheirus araneiformis*, the number of our Lamiinæ described has continually increased, and owing to the scarcity of the books containing them, the descriptions are accessible to but few students. The object of the present paper is to bring together these descriptions and thus complete the series commenced some years ago in the Bulletin of the Brooklyn Entomological Society. All the genera containing numerous species have been recently treated in synoptic form by Dr. Horn, and they will therefore be but briefly copied here. For a more detailed study the reader is referred to the original papers, viz.: "Notes on some genera of Cerambycidæ of the United States," Trans. Am. Ent. Soc. vii,

1878; "Notes on some genera of Cerambycidæ with descriptions of new species," Trans. viii, 1880; and "Descriptions of some new Cerambycidæ with notes," Trans. xii, 1885.

In the study of this subfamily the specimens that accumulate display differences in color, in punctuation and in vestiture, that do not always indicate specific difference. The influence of climate and of the food-plant is very marked, and the variation thereby occasioned has led to the description of some species that are now considered races or synonyms. Where slight difference in color, etc., accompany difference in food-plant or locality I have considered them indicative of races; where these differences, though they may seem of considerable import when only two extremes are compared, are connected by intergrades I have considered them as indicative of individual variation. Should the reader possess only the two extremes, I beg him to believe that the intergrades, nevertheless, do exist.

It is a pleasure to acknowledge the assistance I have received from Mr. Frederick Blanchard and Dr. John Hamilton, to whom I owe many of my specimens; to Mr. Samuel Henshaw, who has revised the lists of localities given; and to Dr. Horn, who has allowed me to use his collection and library, and, in addition, has given much advice throughout the paper.

The tribes represented in our fauna are arranged in series, as follows:

I. Humeral angles not prominent; metasternum short; wings wanting; front tibiæ sulcate.....DORCADIOIDES.

A. Front large, palpi slender.

Support of labrum distinct, coriaceous.....I. Dorcadiini.

Support of labrum not visible.....II. Monilemini.

II. Humeral angles distinct; wings perfect; elytra entire; front tibiæ sulcate.

A. Body small, elytra gibbous or spinous near the base; prothorax constricted behind. front large, inflexed; ungues divergent.CYRTINOIDES.

Front coxal cavities rounded.....III. Cyrtinini.

Front coxal cavities angulated.....IV. Psenocerini.

B. Body elongated, usually large, elytra not gibbous; scape of antennæ with an apical cicatrix (except *Dorcaschema*); front coxal cavities angulated, sometimes a little open behind; eyes rather finely granulated; ungues usually divaricate, but variable....LAMIOIDES.

V. Monohammini.

C. Ungues divergent.

a. Scape of antennæ with an open apical cicatrix; front coxal cavities angulated, middle coxæ open; eyes finely granulated; body broad.

MESOSOIDES.

VI. Mesosini.

b. Scape of antennæ without cicatrix; front coxal cavities variable, middle open ONCIDEROIDES.
Front large, flat; front coxæ angulated..... X. Onciderini.
Front convex; front coxæ nearly rounded; eyes very coarsely granulated. XI. Ataxiini.
Front inflexed, form very elongate..... XII. Hippopsini.

D. Ungues divaricate; scape of antennæ without cicatrix.
a. Front coxæ rounded, middle coxæ closed, or nearly so; form usually stout. ACANTHODEROIDES. VII. Acanthoderini.
b. Front coxæ angulated, middle coxæ open..... POGONOCHEROIDES.
Support of labrum coriaceous..... VIII. Pogonocherini.
Support of labrum not visible..... IX. Desmiphorini.
c. Front coxæ protuberant, subconical, cavities angulated. middle coxæ open externally; eyes very finely granulated; form cylindrical, prothorax never armed, rarely tuberculate on the sides. SAPERDOIDES.
Ungues simple (except the outer one of front and middle tarsi in certain males)..... XIII. Saperdini.
Ungues cleft or appendiculate..... XIV. Phytoeciini.

III. Humeral angles distinct, wings perfect, elytra abbreviated; front tibiæ not sulcate; claws divaricate..... METHIOIDES.
a. Front coxal cavities angulated, widely open behind; middle coxal cavities open externally; front short, eyes very large, coarsely granulated; oral organs atrophied..... XV. Methiini.

The arrangement of tribes stated above is copied from the "Classification," except that the Michthysomini are omitted; the reasons for this course appear below.

MICHTHYSOMA LeConte.

M. heterodoxum Lec., 1852, Journ. Ac. Phil. ser. 2, ii. p. 30.
Length 6-8 mm.; .24-.32 inch. *Habitat.*—Georgia, North Carolina, Virginia.

This insect has been very rare in collections, only two or three specimens until recently being known. I owe mine to the kindness of Mr. Blanchard, who found several specimens near Highlands, N. C., running on the branches of oaks. It is black, the head and prothorax densely coarsely punctured, the elytra less densely punctured, shining, with short hairs proceeding from the punctures. The prothorax is as wide as the head, with an acute lateral spine rather in front of the middle. The resemblance to *Monilema* and *Cyrtinus* is very marked, and it shares the ant-like habit of the latter when seen running in life. It lacks, however, the essential characters of the subfamily Lamiinæ, viz.: the sulcate tibiæ and the slender palpi. The first character, it is true, is also lacking in the degenerate Methiini; but *Michthysoma* does not present an assemblage of feeble

characters that would permit it to be attached at the end of a group as a feebly differentiated cousin. The simple tibiæ, for though described by Dr. LeConte as "feebly sulcate," they are really not at all sulcate, place this insect in the subfamily Cerambycinæ, there to constitute a tribe related to Clytini. It may be noted that the affinity of this tribe through *Euderces* towards the Lamiinæ has already been stated, *vide* "Classification" p. 303.

The absence of the tibial sulci was pointed out by Dr. Horn several years ago, and I believe that he also stated then the true position of the tribe.

Tribe I. Dorcadiini.

This tribe, represented by numerous species in the neighborhood of the Mediterranean, has but two representatives in our fauna:

Plectrura spinicauda Mann., 1852, Bull. Mosc. ii, p. 366; Eschsch. Dej. Cat. 3 ed. p. 373: *producta* Lec., 1854, Proc. Ac. Phil. vii, p. 19; LeConte, U. S. Pacif. R. R. Ex. and Surveys xii, part ii, Entom. Report, 1857, p. 65, pl. 2, fig. 15; Coleop. Alaska (Tr. Am. Ent. Soc. xxi, 31).

Length 11-12 mm.; .44-.48 inch. *Habitat.*—Sitka, Queen Charlotte Island, Vancouver, Oregon, Washington.

Ipochus fasciatus Lec., 1852, Jour. Ac. Phil. ser. 2, ii, p. 167; *subnitidus* Casey, 1891, Ann. N. Y. Ac. Sci. vi, p. 45; *pubescens* Casey, l. c.

Length 7.5-4.5 mm.; .30-.18 inch. *Habitat.*—Southern California.

The first is a brownish insect with rows of shining tubercles on the elytra, which, at the apex, are prolonged into acute serrated cusps. The sides of the prothorax are armed and serrate. Mr. C. J. Weidt informs me that this species is frequently beaten from the crab apple.

The second is a robust convex insect, sparsely clothed with long erect hair; the thorax, which is unarmed, bears two pairs of discal pubescent spots; the elytra have three transverse, pubescent fasciæ, irregular in design and variable in extent, sometimes so broad as to cover the posterior part of the elytra. The males are more slender than the females. Gen. Casey states that this species occurs on the blossoming branches of pine. From the range of variation observed in a considerable number of specimens I am satisfied that the characters on which this author bases two new species are only individual.

Tribe II. Monilemini.

Contains the genus *Monilema* only. Dr. Horn's synopsis (Trans. Am. Ent. Soc. xii, pp. 182–184) is as follows:

A. Scape of antennæ submucronate inwards at tip; first joint of hind tarsus as long, or even longer than the next two and comparatively slender. Subgenus **Monilema.**

B. Scape of antennæ simple: first joint of hind tarsus not longer than the next two and broad.....Subgenus **Collapteryx.**

Subgenus **Monilema.**

In addition to the above-named characters the following may be mentioned: the first and second joints of the hind tarsi are glabrous at middle, the second with a narrow, spongy, pubescent space each side, the third entirely spongy pubescent. The anterior and middle tarsi have the first three joints spongy pubescent beneath, the pubescence divided by a narrow line.

The two species belonging here are separated as follows:

Thorax quadrate, or a little wider than long, the sides with a feeble tubercle; elytra sparsely and regularly punctured at basal half, wrinkled at apex, the sides arcuately deflexed.....**annulatum.**

Thorax cylindrical, usually longer than wide, without trace of spine or tubercle; elytra not conspicuously punctate, usually smooth, but feebly shining, sometimes with deep longitudinal wrinkles, the sides abruptly deflexed and obtusely margined near the base.....**appressum.**

Subgenus **Collapteryx.**

The vestiture of the tarsi is variable, and by it and other structures the species may be separated as follows:

Scape of antennæ and legs smooth.....2.

Three basal joints of antennæ and legs coarsely punctured.....7.

2. First joint of hind tarsus without any spongy pubescence beneath.....3.
 First joint of hind tarsus spongy pubescent over almost the entire surface..8.
3. Second joint of hind tarsus with a small spongy pubescent space each side..4.
 Second joint of hind tarsus without trace of spongy pubescence.....6.
4. Thoracic spines long and acute, directed strongly upward and backward.
 Elytra with slightly depressed disc, the sides abruptly declivous, obtusely margined near the humeri; thorax with very few punctures..**gigas.**
 Thoracic spines small or tuberculiform, sometimes barely perceptible.....5.
5. Thorax with numerous coarse and fine punctures intermixed over the entire surface, the coarser punctures more numerous near the base and apex. **semipunctatum.**
 Thorax almost entirely smooth, a few punctures at most, along the base and apex.
 Elytra with extremely few punctures, these placed at the middle of the sides and under the humeri.....**lævigatum.**
 Elytra with numerous coarse punctures extending two-thirds to apex, the deflexed portion punctured nearly to the apex.....**armatum.**
6. Anterior tarsi ♂ with the first three joints spongy pubescent beneath; thorax coarsely punctured with a feeble lateral tubercle.....**obtusum.**
 Anterior tarsi ♂ *with the first three joints spongy pubescent beneath;** ♀ with the third joint bearing a spongy pubescent space each side; thorax punctured at apex and base; the lateral spine small but acute. **spoliatum.**

* The words in italics are interpolated, and are necessitated by the discovery since the original was written of *spoliatum* ♂. The sexual marks in section 6 are also interpolated by me.—C. W. L.

Tarsi ♂ with scarcely a trace of spongy pubescence on any of the joints; thorax coarsely punctured, the lateral spine moderately long and acute. **forte.**

7. Thorax sparsely punctured, without trace of lateral tubercle; elytra coarsely punctured; hind tarsi with a small spongy pubescent spot at the apex of the first joint, the second and third joints entirely spongy pubescent **subrugosum.**

8. Intercoxal process of mesosternum rather deeply grooved in its entire length; elytra variegated with a network of very fine pubescence in at least one sex.

Elytra distinctly wider at base than the thorax, the humeri slightly prominent; thorax with very few punctures, and these placed along the base and apex; pubescence of elytra white..... **ulkei.**

Elytra not wider at base than the thorax, the humeri rounded; thorax with numerous punctures on the disc; pubescence of elytra fulvous. **variolare.**

Intercoxal process of mesosternum nearly flat, not grooved; elytra not pubescent..... **crassum.**

The sexes of *Monilema* are distinguished by the form of the last ventral segment broadly emarginate in the male and oval at tip in the female. The femora are strongly clavate in the male, comparatively slender in the female. The pygidium is usually concealed in the male, exposed in the female.

I am indebted to Mr. Henry Ulke for a statement of the sex of his specimen of *M. obtusum*, of which species it is the type, and so far as I know the only representative.

BIBLIOGRAPHY.

M. annulatum Say, 1824. Journ. Ac. Phil. p. 404; LeConte, ed. ii, 187; Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 167; Lacord, Gen. Atl. x, pl. 97, fig. 2.

Length .48–.72 inch.; 12–18 mm. *Habitat.*—Arizona, New Mexico, Texas, Kansas, Missouri, Nebraska, Colorado, Montana.

M. appressum Lec., 1852, l. c. p. 168; Col. Kan. 1859, p. 21, pl. 2, fig. 17.

Length .56–1.16 inch.; 14–29 mm. *Habitat.*—Arizona, New Mexico.

M. gigas Lec., 1873, New Species, S. M. C. 264, p. 230; *spinicolle* Cas., 1891, l. c.

Length 1.20–1.36 inch.; 30–34 mm. *Habitat.*—Arizona, rare.

M. semipunctatum Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 167.

Length .74–1.00 inch.; 18.5–25 mm. *Habitat.*—Cape San Lucas, Lower California, rare.

M. lævigatum Bland, 1862, Proc. Ent. Soc. Phil. i, p. 267.

Length .84–.88 inch.; 21–22 mm. *Habitat.*—New Mexico, Kansas.

M. armatum Lec., 1853, Proc. Ac. Phil. vi, p. 234; Acan. Nat. 1859, p. 128, pl. 13, fig. 2.

Length .66–1.00 inch.; 16.5–25 mm. *Habitat.*—New Mexico, Texas, Colorado.

M. obtusum Lec., 1873, New Species, S. M. C. 264, p. 230.

Length .75 inch.; 19 mm. *Habitat.*—Utah, very rare. One specimen known.

M. spoliatum Horn, 1885, Trans. Am. Ent. Soc. xii, p. 186.
Length .75-1.00 inch. *Habitat.*—San Bernardino, California.

M. forte Lec., 1873, l. c. p. 230.
Length 1.20 inch.; 30 mm. *Habitat.*—Arizona, very rare. One specimen known.

M. subrugosum Bland, 1862, l. c.; Thoms. Physis, i, p. 75.
Length .78 1.08 inch.; 19.5-27 mm. *Habitat.*—Cape San Lucas, California.

M. ulkei Horn, 1885, l. c.
Length .76-.86 inch. *Habitat.*—New Mexico, Texas.

M. variolare Thoms., 1867, Physis, i, 1. p. 77.
Length .70-.88 inch.; 18-22 mm. *Habitat.*—Mexico (doubtfully U. S.).

M. crassum Lec., 1853, Proc. Ac. Phil. vi, p. 234; Lacord., Gen. Col. ix, 1869, p. 281, not. 2.
Length .74-.90 inch.; 18.5-.22.5 mm. *Habitat.*—New Mexico, S. W. Texas.

In addition to the descriptions cited above, each species is redescribed by Dr. Horn, Trans. Am. Ent. Soc. xii, p. 186. All the species of *Monilema* live on cactus. The imagines are found on those plants, and Mr. W. G. Wright and other friends in the southwest tell me they have found the larvæ boring in them. The locality "Montana" for *M. annulatum* is taken from six specimens collected by Mr. L. Kennedy near Blatchford, in that State, where cacti are abundant. They exhibit considerable variation in sculpture, but are otherwise identical with the more southern form.

Tribe III. Cyrtinini.

Contains a single representative occurring in the Atlantic States on dead branches of oaks. It is the smallest Lamiine in our fauna; dark piceous, the antennæ annulate, the elytra ornamented with a transverse blotch of white pubescence before the middle. The prothorax is smooth, oval, very convex; the elytra are also convex and each bears, near the scutellum, a large, acute spine. The legs are stout, the thighs strongly clavate, and the sulci of the anterior tibiæ are distinct.

Cyrtinus pygmæus Hald. (*Clytus*), 1847, Trans. Am. Phil. x, p. 42; Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 166; *minutissimus* Dej., Cat. 3, ed. p. 357.
Length .08-.12 inch.; 2-3 mm. *Habitat.*—Alabama. District of Columbia, Pennsylvania, New Jersey, New York, Ohio, Massachusetts. Canada.

Tribe IV. Psenocerini.

Contains a single representative occurring in the Atlantic States and westward to Nebraska on various forest trees and at times destructive to the cultivated currant. It is a dark brown or black insect, densely punctured, with the scutellum, a narrow oblique band composed of two spots about the middle, and a wider transverse

band behind the middle and not extending to the suture, clothed or composed of white pubescence. The elytra are cylindrical, and each bears an oval elevation near the scutellum, which is feeble, or may disappear in small specimens. This insect is abundant and varies greatly; the white markings of the elytra are often indistinct and even entirely absent. The name *tristis* has been applied to a small specimen lacking the elytral elevation and the bands, but, as pointed out by Dr. Hamilton, these characters indicate only individual variation.

Psenocerus supernotatus Say (*Clytus*), 1823, Journ. Ac. Phil. iii, p. 425; Lec., ed. ii, 200; Hald., 1847, Trans. Am. Phil. x, p. 42; Osten Sacken, Proc. Ent. Soc. Phil. i, p. 122; *lunifer* Dej. Cat. 3, ed. p. 375; *tristis* Casey, l. c.; Hamilton. 1892, Can. Ent. xxiv, 160 and 298.

Length .12–.24 inches; 3–5 mm. *Habitat.*—North Carolina. District of Columbia, Pennsylvania, New Jersey, New York, Massachusetts, Canada, Illinois, Iowa, Missouri, Nebraska, Kansas. [This species breeds in grape, currant and gooseberry of choice, and sometimes in twigs of apple, etc.] H.

Tribe V. Monohammini.

Seven genera, constituting three groups, exist in our fauna:

Legs long, the front pair elongated in ♂, and the antennæ much longer than the body.
- Prothorax with lateral spines (*Monohammi*)..... **Monohammus.**
- Prothorax cylindrical (*Ptychodes*).
 - Scape of antennæ with a large, well-defined cicatrix.
 - Eyes nearly divided..... **Ptychodes.**
 - Scape of antennæ without cicatrix.
 - Elytra rounded at tip..... **Dorchaschema.**
 - Elytra pointed at tip..... **Hetoemis.**

Legs equal, not elongated (*Goes*).
- Scape of antennæ with a distinctly limited cicatrix.
 - Prothorax cylindrical..... **Cacoplia.**
 - Prothorax with a lateral spine..... **Goes.**
- Scape of antennæ with the cicatrix not sharply defined.
 - Prothorax with a strong lateral spine..... **Plectrodera.**

MONOHAMMUS Serville.

The following synopsis is copied from the work of Dr. Horn, Tr. Am. Ent. Soc. xii, p. 190:

Tips of elytra rounded, the sutural angle acute or spiniform, more especially in the male.
- General surface color brownish, the elytra irregularly mottled with patches of brown and gray or white pubescence..... **titillator.**
- General surface color piceous or black, more or less bronzed, elytral ornamentation as above, the surface sculpture coarser and deeper. **maculosus.**

Tips of elytra rounded, the sutural angle not prolonged, usually very obtuse.
Surface color black, distinctly bronzed, the elytra with very little or no patches of white and brown pubescence; antennæ annulate in the female. **scutellatus.**
Surface color brown, elytra sparsely mottled with small patches of gray and brown pubescence; antennæ of female uniformly pubescent. **confusor.**
Tips of elytra obliquely prolonged and acute; elytra brownish, surface feebly punctured, clothed with ochreous, white and brown patches intermixed. **marmorator.**

M. titillator Fab. (*Lamia*), 1775, Syst. Ent. p. 279; Oliv. (*Cerambyx*), 1795, Ent. iv, 67, p. 85, pl. 15, fig. 109; Lec., 1852, Journ. Ac. Phil. ser. 2. ii, p. 148; *Cerambyx carolinensis* Oliv., 1790, Enc. Meth. vii, p. 643; Ent. iv, 67, p. 85, pl. 12, fig. 88; (*Lamia*) *dentator* ♀ Fab., Syst. Ent. i, 2, p. 278; Beauv., Ins. p. 244, pl. 36, fig. 5; *minor* Lec., 1873, New Species, S. M. C. 264, p. 231.
Length 13 32 mm.; .50–1.25 inch. *Habitat.*—Canada to Washington and southward to Florida.

Varies greatly in size and length of male antennæ, which are sometimes four times the length of the body; also in the sculpture of the thorax and development of the sutural angle.

M. maculosus Hald., 1847, Trans. Am. Phil. x, p. 51; *mutator* Lec., 1850, Agass., L. Sup. p. 235; *marmoratus* ‡ Lec., Journ. Ac. Phil. 1852, ser. 2, ii, p. 148; *clamator* Lec., l. c. p. 149.
Length 16.5–27 mm.; .66–1.06 inch. *Habitat.*—Lake Superior, Montana, Idaho, Washington, California, Nevada, Arizona, New Mexico, Colorado, Vancouver, Ohio?

M. scutellatus Say, 1824 (*Cerambyx*), Long's Exp. ii, p. 289; Lec., ed. i, 192; Lec., l. c. p. 148; Mann., Bull. Mosc. 1853, iii, p. 248; *resutor* Kirby, 1837, Faun. Bor. Am. iv, p. 167; *oregonensis* Lec., 1873, New Species S. M. C. 264, p. 231: *obtusus* Casey, l. c.; Coleop. Alaska, Tr. Am. Ent. Soc. xxi, p. 31.
Length 16 31 mm.: .64–1.24 inch. *Habitat.*—Maine to Oregon and Hudson's Bay region, Arizona, Colorado, New Mexico, Alaska, British Columbia.

The scutellum is conspicuously clothed with white pubescence, the median line more or less denuded. The punctuation also is variable, and those specimens described by LeConte as *oregonensis*, and Casey as *obtusus*, in which the pubescence of the scutellum is amply divided by the median glabrous line, and that of the elytra more evidently arranged in small patches may indicate a race that is being differentiated in the Pacific States; at present the differences seem evanescent.

M. confusor Kirby, 1837, Faun. Bor. Am. iv, p. 168; Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 148.
Length 28–31 mm.; 1.10–1.24 inch. *Habitat.*—Canada, New England and Middle States.

The male antennæ are often twice as long as the body.

M. marmorator Kirby, 1837, p. 169 (*Lamia*) *marmorata* Rand., 1838, Bost. Journ. ii, p. 42; *fautor* Lec., 1852, l. c. p. 149; *acutus* Lacord., 1869, Gen. Col. ix, p. 316, not.; *maculosus* Hald., Tr. Am. Phil. Soc. x, 51.

Length 25 mm.; 1.00 inch. *Habitat.*—Nova Scotia to Lake Superior.

This species is rare in collections.

All the species of *Monohammus* are redescribed by Dr. Horn in the Trans. Am. Ent. Soc. xii, pp. 191–192. They infest pine trees.

PTYCHODES Serville.

P. trilineatus Linn., 1771 (*Cerambyx*); Mant., Plant. vi, p. 532; Drury, Ins. p. 91, pl. 41, fig. 1, ♀; Lec., 1852, l. c. p. 146; *Saperda vittata* Fab., 1777, Gen. Mant. p. 231; *Ptychodes vittatus* Hald., 1847, Trans. Am. Phil. x, p. 53.

Length 22–28 mm.; 88–1.12 inch. *Habitat.*—Louisiana.

A large brown insect; a broad white stripe on each elytral side margin and a common sutural stripe are all continued on the thorax. Heretofore known to our lists as *vittatus* Fab.; this insect, as noted by the late H. W. Bates (Biologia v, 95), must be called *trilineatus*, the Linnaean name having priority.

DORCHASCHEMA LeConte.

The synopsis of Dr. Horn is as follows:

Thorax truly cylindrical, longer than wide; general surface color less the pubescence, brown.

Thorax transversely wrinkled, the punctuation indistinct; elytra densely cinereo-pubescent with small, rounded, denuded spot behind the middle. **wildii.**

Thorax not wrinkled, punctuation distinct; pubescence of elytra rather sparse, marmorate with ochreous spots, a denuded interrupted band behind the middle **alternatum.**

Thorax slightly tubularly narrowed behind the middle, nearly as wide as long; color black; disc of thorax finely rugose **nigrum.**

D. wildii Uhler, 1855, Proc. Ac. Phil. vii, p. 217.

Length 15–22 mm.; .60–.88 inch. *Habitat.*—Maryland, Pennsylvania, Ohio, Indiana.

D. alternatum Say, 1823 (*Saperda*), Journ. Ac. Phil. iii, p. 405; Lec., ed. ii, 188; Hald., 1847, Trans. Am. Phil. x, 54; Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 147.

Length 8–12 mm.; .32–.48 inch. *Habitat.*—South Carolina, North Carolina, District of Columbia, Pennsylvania, New Jersey, New York, Ohio, Illinois, Texas.

D. nigrum Say, 1827 (*Saperda*), Journ. Ac. Phil. v, p. 272; Lec., ed. ii, 330; Hald., l. c.; Lec., l. c.

Length 8–10 mm.: .32–.40 inch. *Habitat.*—Virginia, Pennsylvania, New Jersey, New York, Massachusetts, Canada West, Northern Illinois, Louisiana.

The first two species breed in mulberry and osage orange, the third in hickory, from the dead limbs of which it may be obtained in abundance.

HETOEMIS Haldeman.

H. cinerea Oliv., 1795 (*Saperda*), Ent. 68, p. 28, pl. 3, fig. 35; Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 146; *juglandis* Hald., 1847, Trans. Am. Phil. x, p. 54; *Saperda trilineata* Say, 1823, Journ. Ac. Phil. v, 2, p. 273; Lec. ed. ii, 331.

Length 8–12 mm.; .32–.48 inch. *Habitat.*—Alabama, Pennsylvania, New Jersey, New York, Ohio, Northern Illinois, Louisiana.

Breeds in walnut, mulberry, osage orange and hickory, and may be obtained from dead limbs of the latter abundantly. Similar in appearance to the preceding species, but uniformly clothed with gray pubescence. The antennæ are very long and slender, and the elytra are pointed towards the tip.

CACOPLIA LeConte.

C. pullata Hald., 1847 (*Saperda*), Trans. Am. Phil. Soc. x, p. 55; *Saperda* Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 163: Proc. Ac. Phil. vi, p. 234; *pruinosa* Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 149. Proc. Acad. Nat. Sci. vi, 234; *Hebestola nebulosa* Hald., l. c. p. 54.

Length 10-16 mm.; .40–.64 inch. *Habitat.*—Alabama, Pennsylvania, New Jersey, New York.

Uniformly clothed with soft gray pubescence; thorax unarmed, elytra simply rounded at tip or obsoletely truncate; frontal line impressed, a longitudinal glabrous line at middle of pronotum. This species is taken frequently by Mr. Wenzel, near Philadelphia, on swamp oak, but seems otherwise to be seldom found.

GOES LeConte.

Dr. Horn's synopsis (Tr. Am. Ent. Soc. xii, p. 193) is as follows:

Surface color of the body brownish; antennæ of male at most one and a quarter times the length of the body.....2.

Surface color of body black, shining; antennæ of male twice as long as the body, of females as long as in the preceding males.....5.

2. Elytra with conspicuous denuded fascia one-third from apex.....3.
 Elytra without conspicuous denuded fascia.....4.
3. Pubescence of surface white.....**tigrina.**
 Pubescence ochreous or luteous, the basal region of elytra darker, less pubescent.....**pulchra.**
 Pubescence marmorate, whitish and ochreous, the apical region darker ochreous.....**debilis.**
4. Pubescence luteous or pale brown, inconspicuously mottled with paler spots. **tesselata.**
 Pubescence cinereous or almost white, uniform, sometimes with a faint trace of darker fascia.....**pulverulenta.**
5. Elytra coarsely punctured; pubescence whitish, a small conspicuous black spot on each elytron one-third from apex.....**oculata.**

G. tigrina De Geer, 1775 (*Cerambyx*), Ins. v. p. 113, pl. 14, fig. 6; Lec., 1852, ser. 2, ii, p. 150; *Monohammus tomentosus* Ziegler, Proc. Acad. ii, p. 47; Hald., l. c. p. 51; *tigris* Schoenh., Syn. Ins. i, 3, p. 383.
Length 25 mm.; 1.00 inch. *Habitat.*—Florida, Maryland, Pennsylvania, New Jersey, New York, Canada West.

G. pulchra Hald., 1847 (*Monohammus*), l. c. p. 150.
Length 23 mm.; .92 inch. *Habitat.*—South Carolina, North Carolina, Pennsylvania, New Jersey, New York, Vermont, Ohio, Louisiana. Breeds in hickory.

G. debilis Lec., 1852, l. c. p. 150.
Length 11–13 mm.; .44–.52 inch. *Habitat.*—Pennsylvania, New Jersey, New York, Iowa, Louisiana.

G. tesselata Hald., 1847 (*Monohammus*), l. c. p. 51; Lec., l. c. p. 150.
Length 20 mm.; .80 inch. *Habitat.*—Georgia, N. Jersey, New York, Louisiana.

G. pulverulenta Hald., 1847 (*Monohammus*), l. c. p. 51; Lec., l. c. p. 150.
Length 20–22 mm.; .89–.88 inch. *Habitat.*—Florida, Pennsylvania, New Jersey, New York, Massachusetts, Ohio. Breeds in beech and in wild cherry.

G. oculata Lec., 1862, Proc. Acad. p. 40.
Length 10–11 mm.: .40–.44 inch. *Habitat.*—Pennsylvania, New York, Canada West, Ohio, Wisconsin.

PLECTRODERA LeConte.

P. scalator Fab., 1775 (*Lamia*), Ent. Syst. i, 2, p. 278; (*Cerambyx*) Oliv., 1795, Ent. iv, 67, pl. 22, fig. 172; Lec., 1852, Journ. Ac. Phil. ser. 2, ii, p. 151; *Lamia belli* Lec., Bost. Journ. v, p. 209; *scalator* Lec., l. c. pl. 18, fig. 11.
Length 25–35 mm.; 1.00–1.40 inch. *Habitat.*—Texas, Louisiana, Kansas, Missouri, Nebraska, Illinois, Montana, Western Pennsylvania, District of Columbia.

Black, shining, with conspicuous white pubescence arranged in irregular transverse fasciæ. The Montana specimens bear much more pubescence than those living in the Mississippi Valley.

[Breeds in various poplars (*Populus*), which are sometimes greatly injured by the larvæ.] "Ham."

Tribe VI. Mesosini.

Contains one species.

Synaphœta guexi Lec., 1852 (*Mesosa*), Journ. Ac. Phil. ser. 2, ii, p. 166; U. S. Pacif. R. R. Surv. vol. xii, part ii, Zool. Ent. Rept. 1857 (*separatum*), p. 66, pl. 2, fig. 16; Thoms., Syst. Ceram. p. 60.
Length 12–19 mm.; .48–.76 inch. *Habitat.*—California, Vancouver.

A large stout insect with gray pubescence; antennæ annulate, prothorax with two black vittæ and elytra each with two angulated black bands.

Tribe VII. Acanthoderini.

This tribe, which contains a considerable number of species, has been reviewed by Dr. Horn in the TRANSACTIONS viii, pp. 115–133. The synopsis which follow are founded upon his, but in some instances the accumulation of specimens indicates that the number of species may be reduced.

The arrangement of the genera is as follows:

Scape of antennæ clavate.....Subtribe **Acanthoderini.**
Scape of antennæ nearly cylindrical.....Subtribe **Acanthocinini.**

Subtribe Acanthoderini.

All the species are referred to *Acanthoderes.*

Subtribe Acanthocinini.

Lateral tubercle of thorax at the middle, tarsi broad.....(**Lagochierini**).
Lateral spine of thorax very prominent, the disc tuberculate, antennæ much longer than the body.....**Lagocheirus.**
Lateral spine obtuse, disc not tuberculate, antennæ not longer than the body in either sex.....**Cœnopœus.**
Lateral tubercle of thorax behind the middle; tarsi slender, except in *Mecotetartus.*
Females without elongated ovipositor.....(*Liopi*).
Thorax feebly tuberculate or angulate at the sides a little behind the middle, mesosternum broad, first joint of hind tarsi not longer, if as long, as the next two.....**Leptostylus.**
Thorax distinctly angulate, usually acutely tuberculate, or with a short spine behind the middle; mesosternum triangular or narrow.
Antennæ without traces of ciliæ beneath, first joint of hind tarsi as long as the next two.
Prosternum narrow, but not linear; body without erect hairs.**Liopus.**
Prosternum linear, form cylindrical, elytra with erect hairs..**Dectes.**
Antennæ distinctly ciliate beneath.
Hind tarsi short, first joint not as long as 2–3; antennæ of ♂ very long, the fourth joint longer than the whole body....**Mecotetartus.**
Hind tarsi slender, first joint as long as the next three; antennæ normal; pro- and mesosternum very narrow.
Elytra without lateral carina.....**Lepturges.**
Elytra with distinct lateral carina.....**Hyperplatys.**
Females with elongated ovipositor.....(Acanthocini),
Body above with erect hairs besides the pubescence.
Mesosternum broad; antennæ not much longer than the body and not ciliate beneath, except feebly on the scape.....**Graphisurus.**
Mesosternum narrow; antennæ twice as long as the body and very slender, ciliate beneath**Ceratographis.**
Body above without erect hairs.
Mesosternum moderate; antennæ very long, joints 3-4, at least, densely fringed beneath with short hairs.....**Acanthocinus.**
Mesosternum broad; antennæ moderate, not fringed beneath, lateral tubercle of thorax close to the base, ovipositor of the female shorter than usual**Nyssodrys.**

The arrangement of the genera as stated above is that of the "Classification," and incorporates the recent notes of Dr. Horn and Messrs. Bates and Gahan.

ACANTHODERES Serville.

Body above maculate with white pubescence.
Sutural region of elytra vaguely grooved, the groove limited on each elytron by a feeble costa.
Elytra with moderately broad transverse band of white in front of middle broadly interrupted at the suture.....**quadrigibbus.**
Sutural region not grooved.
Elytra with moderately broad oblique space of whitish pubescence extending from the humeri to the suture.....**peninsularis.**
Elytra without whitish space, but with a distinct M-shaped black mark behind the middle on each.
Base of elytra irregular, an oblong obtuse umbone at middle of base. Smaller species.....**decipiens.**
Base of elytra regularly convex, without umbone. Larger species. **morrisii.**
Body above not maculate, elytra with black setæ.....**wickhami.**

A. quadrigibbus Say, 1835 (*Acanthocinus*), Bost. Journ. i, 195; Lec., ed. ii, 665; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 175; *bimaculatus* Mels., Cat. No. 758.
Length 10 mm.; .40 inch. *Habitat.*—Massachusetts, New York, New Jersey, Pennsylvania, Ohio, North Carolina, Louisiana, Arizona.

A. peninsularis Horn, Tr. Am. Ent. Soc. 1880, viii, 116.
Length 12–16 mm.; .48–.64 inch. *Habitat.*—Lower California.

A. decipiens Hald., 1847 (*Aegomorphus*), Tr. Am. Phil. Soc. x, 45; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 176.
Length 12 mm.; .48 inch. *Habitat.*—Massachusetts, New York, New Jersey, Pennsylvania, Virginia, Georgia, Louisiana, Nebraska, Ohio, Canada, Maine.

A. morrisii Uhler, 1855, Proc. Ac. vii, p. 417; *leucogenus* Thoms., 1868, Physis, i, 6, p. 148.
Length 20 mm.; .80 inch. *Habitat.*—Missouri, Pennsylvania, Canada.

A. wickhami n. sp.
Length 10–12 mm.; .40–.48 inch. *Habitat.*—Southern Arizona.

Several specimens taken under the leaves of *Opuntia* (Cactus) in the Tucson Mountains by Mr. H. F. Wickham, to whom I take much pleasure in dedicating this species.

Form moderately robust, above slightly depressed, color nearly black, body and elytra sparingly clothed with short black hair. Head closely punctulate, a few coarse punctures intermingled, pubescence very sparse. Eyes coarsely granulate, emarginate in front; antennæ brownish piceous, as long as the body ♂, the scape clavate, second joint short, third slightly longer than fourth, 4–11 gradually longer; each joint beyond the second finely pubescent and bearing at apex three or

four stiff hairs. Thorax wider than long, strongly angulate at middle of sides, disc vaguely bituberculate before the middle, surface finely punctulate and clothed with distantly placed black hairs. Elytra nearly parallel, wider at base than the thorax at middle, slightly convex; finely punctulate with numerous large punctures intermixed, from which proceed short, stiff, black hairs; sutural stria obsolete at base, well marked at apex, dorsal striæ obsolete; a vaguely marked oblique depression starts at each humerus and disappears before it reaches the suture. Elytral apices conjointly rounded, slightly dehiscent. Body beneath piceous, punctulate, sparsely pubescent. Legs brownish, finely pubescent with long, fine, brown hairs intermixed. Femora clavate; tibiæ straight; tarsi broad, densely pubescent beneath, without fringe of long hair at the sides.

In respect to the form of the tarsi, this species is not congeneric with our other *Acanthoderes*, but it otherwise falls within the limits of that genus, and is readily distinguished by its uniform dark color. A specimen in Dr. Horn's collection was examined by the late H. W. Bates, and by him thought to be allied to *Tapeina*.

LAGOCHEIRUS Erichson.

This genus contains two species occasionally found in the extreme south of our country, large robust insects, brown, marked with gray pubescence. They may be separated by Dr. Horn's synopsis:

Punctures of elytra barely attaining the middle, humeral region submuricate, disc with very evident rows of short, erect scale-like hairs. **araneiformis.**

Punctures extending to apical fourth, humeral region simply punctured, disc with feeble traces of tufts..... **obsoletus.**

L. araneiformis Linn., 1767 (*Cerambyx*), Syst. Nat. ed. xii, p. 625; Drury, Ins. p. 66, pl. 35, fig. 4 (*Acanthoderus*); Castle. In. Hist. Nat. ii, p. 462; Thoms., Class. Long. pl. 1, figs. 1-8; Jacq., Duv. Hist. Cub. vii, p. 271, pl. 11, fig. 2; Chev., An. France, 1862, ser. 4, vol. ii, 247.

Length 19-23 mm.; .76-.92 inch. *Habitat.*—Florida, Mexico, Brazil, Tahiti, San Domingo. Cayenne.

L. obsoletus Thoms., 1860, Class. Long. p. 10.

Length 22.5-24 mm.; .90-.96 inch. *Habitat.*—Mexico, Lower California.

CŒNOPŒUS Horn.

C. palmeri Lec., 1873 (*Leptostylus*), New Species, S. M. C. No. 264, p. 233; Horn, 1880, Trans. Am. Ent. Soc. viii, p. 118, pl. 2, fig. 1.

Length 18 mm. ♀, 25 mm. ♂; .70-1.00 inch. *Habitat.*—Arizona, So. California.

Antennæ black, each joint annulate with cinereous at base. Thorax sparsely coarsely punctured, surface irregularly clothed with very fine ochreous pubescence. Elytra about twice as long as wide at base, punctures moderately coarse, distant and irregular, surface without costæ or tubercles, piceous black, with a large discal saddle shaped space of ochreous pubescence extending a little behind the middle, behind which are large irregular spots of similar pubescence. Body beneath with extremely fine ochreous pubescence. Legs black, with very fine black pubescence, tibiæ with a cinereous band at middle.

The pattern of the elytral markings in the present genus and in *Lagocheirus* are the same, and in both genera the sixth joint of the antennæ is prolonged inwards in the male sex.

LEPTOSTYLUS LeConte.

The species which comprise this genus resemble very closely those of the following genus, but may be known by the form of the lateral tubercle of the thorax, which is, in every species, very obtuse.

Elytra with asperities or tubercles bearing at their summits short, black, scale-like hairs.....A.
Elytra without asperities and scale-like hairs.....B.
B. Prosternum as wide between the coxæ as the width of a coxal cavity; elytra slightly truncate at tip.....**macula.**
Prosternum narrower than a coxal cavity; tips of elytra separately rounded.
Thorax sparsely punctured, the flanks at middle without punctures. **perplexus.**
Thorax moderately densely punctured, the flanks as densely punctured as the disc.....**collaris.**
A. Thorax densely punctured; elytra with densely placed, coarse, deep punctures.....**sexguttatus.**
Thorax not densely punctured; elytral punctures not closely placed, often inconspicuous or concealed.
Legs hairy, antennæ slightly pilose beneath.....**albidus.**
Legs not hairy, antennæ not pilose.
Surface of thorax not tuberculate, even, punctures regularly placed.
Elytra very indistinctly punctured, especially at apex, the disc with angulate fascia behind the middle, the apices feebly obliquely truncate.....**biustus.**
Elytra distinctly punctured over the entire surface, disc with acutely angulated fascia, apices slightly prolonged not obliquely truncate. **parvus.**
Elytra more distinctly punctured near the apex than at base, apices very obliquely truncate, disc with arcuate fascia at the declivity **arcuatus.**
Surface of thorax more or less tuberculate, and with the punctures irregularly placed and rugose.
Elytra feebly or not roughened with acute tubercles, antennæ in both sexes longer than the body, the joints three and four together not longer than 5-7 taken together.
Tips of elytra not prolonged, apices separately rounded; thorax with rather strong discal tubercle.....**nebulosus.**
Tips of elytra obliquely prolonged, apices obliquely truncate, thorax with very flat tubercles.
Elytra without rows of tubercles, a few only near the base, post-humeral oblique impression very feeble; hind trochanters of ♂ slightly prolonged.....**planidorsus.**
Elytra with four distinct discal series of obtuse tubercles, post-humeral oblique impression well marked; hind trochanters of ♂ not prolonged.

Thorax irregular, but without denuded spaces or lines.
terræcolor.

Thorax with median, fine carina denuded at apex, a short oblique line on each side at apical margin, often denuded.
argentatus.

Elytra with asperities well marked, either as acute tubercles or ridges: antennæ scarcely longer than the body, even in the male; joints three and four together equal in length to 5-8 taken together.

Hind trochanters of ♂ prolonged into a short, but acute spine.
aculifer.

L. aculifer Say, 1823 (*Lamia*), Jour. Am. Phil. Soc. iii, 329; Lec., ed. ii, 186; *Amniscus aculifera* Hald., Tr. Am. Phil. Soc. x, 47; *A. albescens* Hald., l. c. 46; *A. marginellus* Hald., l. c. 47; *A. asperatus* Hald., l. c. 46; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 168; *tuberculatus* Frölich, Naturf. 29, 1832, p. 123, pl. 3, fig. 13; Uhler, Patent Office Rep. 1860, p. 319.

Length 7.5–10 mm.; .40 inch. *Habitat.*—Canada, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, West Virginia, District of Columbia, Virginia, Florida, Texas, Arkansas, Missouri, Kansas, Nebraska, Wisconsin, Illinois.

[A robust, easily recognized species, surface blackish brown, with prostrate cinereous pubescence, a whitish band behind the middle, broad at the suture, but narrowing to a point toward the sides, behind which the surface is conspicuously fuscous. Frequently the basal two-thirds of the elytra is clothed with grayish white pubescence with a marginal streak fuscous from denudation; the asperities mentioned in the table are black and conspicuous. The color and markings are very variable as indicated by the synonymy.

Breeds in a variety of trees either diseased or recently cut, seldom in old timber; the larvæ mine under the bark, as do those of many of its congeners; I have found it in oak, apple, sycamore (*Platanus*), which is its natural food-plant (Uhler). Riley, on osage orange.] "Ham."

L. argentatus Duval, 1857, Ramond de Sagra, Hist. Cuba, vii, p. 273; Chevrolat, An. France, 1862, ser. 4, vol. ii, p. 247; *Amniscus* Dej., Cat.; Lec. (the genus), Jour. Acad. Nat. Sci. ser. 2, ii, 168; Horn, Tr. viii, 120.

Length 9.5 mm.; .38–.44 inch. *Habitat.*—Southern Florida, Nassau, N. P., Cuba.

[Form more elongate, more convex and with longer antennæ than in *aculifer;* there are no denuded asperities, and the hind trochanter of the male is not spiniform; clothed with silvery white pubescence, a slight cloud at the sides of the elytra, a short dark fascia at the declivity, four rows of feebly elevated pubescent tubercles on each, the apices emarginately truncate with the outer angle acute; the thorax is uneven with several tuberculoid elevations, uniformly pu-

bescent, the denuded lines mentioned in the table may either be present or absent; the scutellum is frequently bordered with black from denudation; the antennæ and feet are annulated with brown.] "Ham."

L. terræcolor Horn, 1880, Tr. Am. Ent. Soc. viii, 122; *transversatus* ‡ Lec., Lec., Proc. Am. Phil. Soc. xvii, 414.

Length 9-12 mm.; .36-.48 inch. *Habitat.*—Florida (Bay Biscayne, Lake Worth).

[Elongate, broad, luteous brown, densely clothed with luteous pubescence, a faint darkish cloud and a narrow arcuate fascia behind middle, sometimes obsolete; thorax short, median tubercle indicated by a cluster of coarse punctures, a row of coarse punctures across base and apex; each elytron with four rows of small pubescent tubercles more or less obsolete; the antennæ are annulate and spotted on the upper side.

Breeds in the bark of stumps and logs of recently cut mastich (*Sideroxylon pallidum*), also in the rubber or banian (*Ficus pedunculatus*)] "Ham."

L. planidorsus Lec., 1873, New Species, Ceramb. (S. M. C. No. 264), p. 234.

Length 9 mm.; .36 inch. *Habitat.*—Florida, Louisiana, Texas, Michigan.

[More convex than any of the preceding, densely clothed with fine gray pubescence, often silvery white in southern examples, a blotch along the sides of the elytra (sometimes obsolete) and an oblique, interrupted fascia on the declivity, dark; thorax with a small, denuded tubercle on middle of disc, and three or four smaller ones anteriorly, sometimes scarcely evident; elytra with a slightly flattened area at base limited by a more or less evident carina. The oblique fascia is sometimes complete and conspicuous, and the area behind it fuscous; the posterior trochanters in the male are acute and slightly prolonged; varies in appearance.] "Ham."

L. nebulosus Horn, 1880, Tr. Am. Ent. Soc. viii, 122.

Length 12.5 mm.; 50 inch. *Habitat.*—Nevada.

[Rather convex, clothed with dark gray pubescence, an indistinct angulate band of paler pubescence at middle of elytra and a dark spot on each side; the thorax is one and one-fourth wider than long, while in all the other species it is from one and one-half to twice wider.] "Ham."

L. arcuatus Lec., 1878, Proc. Am. Phil. Soc. xvii, 414.

Length 8 mm.; .32 inch. *Habitat.*—Florida (Tampa).

[This species may easily be recognized by the silvery gray hair on the anterior two-thirds of the elytra, while the posterior third is

smoky brown, and separated by a tri-arcuate line concave in front and joining on each side a narrow black line dilated behind the humerus; the first joint of the hind tarsi is as long as the next two. The latter character if considered apart from others would place this species in *Liopus*, but its general facies and the form of the tubercle at the side of the thorax place it more naturally here.] "Ham."

L. parvus Lec., 1873, New Spec. Ceramb. (S. M. C. No. 264), p. 234; Horn, Tr. Am. Ent. Soc. viii, 121.

Length 4-6 mm.; .16-.24 mm. *Habitat.*—Canada, Pennsylvania, District of Columbia, Ohio, Kansas, Texas.

[Brownish testaceous, pubescence very fine, dense, dark cinereous; an acutely angulate, oblique white band on the elytra behind the middle; four or five minute flat facets on the disc of the thorax, each punctured, often obsolete; in well-marked examples there is on each elytron four costulæ each with a row of small tubercles bearing short erect scales, these in other examples are more or less obsolete. In western Pennsylvania examples the thorax is very dark, the elytra pale olivaceous, with the scale-bearing points conspicuous and the angulated band feebly visible or wanting; not common.] "Ham."

L. biustus Lec., 1852, Jour. Acad. Nat. Sci. ser. 2, ii, 169; Klug., Dej. Cat. 3d ed. p. 364; Chevrolat, *Exocentrus biustus*, An. France, 1862, ser. 4, ii, 249.

Length 4-6 mm.; .16-.24 inch. *Habitat.*—Canada, New York, New Jersey, Virginia, Florida, Cuba, Louisiana, Texas, Illinois.

[Elongate, narrow, brownish testaceous, pubescence silvery gray, the sides of thorax beneath and of the elytra to middle, black; a large triangular area posteriorly conspicuously brown; tarsi black. Readily known by the table and the above characters.] "Ham."

L. albidus Lec., 1852, Jour. Acad. Nat. Sci. ser. 2, ii, 168.

Length 8.5 mm.; .34 inch. *Habitat.*—Arizona.

[This species, from the description, resembles *biustus*, but readily distinguished by the erect, white hairs scattered over the surface; it is densely clothed with white pubescence vaguely variegated with fulvous, the sides of the elytra and a large apical area infuscate.] "Ham."

L. sexguttatus Say, 1825 (*Lamia*), Jour. Acad. Nat. Sci. v, 269; Lec., ed. ii, 328; *Amniscus commixtus* Hald., 1847, Tr. Am. Phil. Soc. x, 47; *hebes* Dej., Cat. 3d ed. 36; *punctatus* Hald., l. c. 49; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 169; Fitch, Rep. iv. 26 (sep.).

Length 7-10 mm.; .28-.40 inch. *Habitat.*—Canada, Massachusetts, New York, New Jersey, Pennsylvania, District of Columbia, Ohio, Michigan, Wisconsin, New Mexico.

[Variable in color and elytral ornamentation. The thorax is somewhat aciculately punctured, disc with five small tuberculoid spots more or less obsolete, pubescence dark, a little variegated with gray; elytra closely, but coarsely punctured, each with two or three faintly elevated costæ, which with the suture each bear a row of distantly placed black points, indefinitely mottled with pale gray and dark spots, an elongate dark spot behind base, another behind middle sometimes becoming a fascia, and another near apex; sides dark with a gray spot near base, and a smaller one near middle; the antennæ and feet are annulated.

All the above markings are more or less obsolete in a large proportion of the individuals. A variety from New Mexico has the body dull rufous and without the rows of penicillate points on the elytra. Said to breed in pine.] "Ham."

L. collaris Hald., 1847 (*Amniscus*), Tr. Am. Phil. Soc. x, 46; *interruptus* Hald., l. c. p. 48; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 170.

Length 10 mm.; .40 inch. *Habitat.*—New York, New Jersey, Pennsylvania, Maryland, Georgia, Florida, Alabama, Kentucky.

[Dull luteous, elytral surface uneven, sprinkled with minute black spots and irregular patches of dark and gray. In typical examples a brownish irregular band extends from humerus to middle, thence narrowing to suture, behind which near the suture are one or two black spots, but in other examples the bands and spots are wanting; the basal angles are black and polished. Thorax with three conspicuous basal tubercles on disc and three smaller ones (sometimes obsolete) near apex.

Var. *interruptus* has red-brown bicostate elytra, with an obsolescent cinereus spot at base, another at the outer margin behind the middle, a third behind this near the suture, and a fourth before apex at the junction of the costæ.] "Ham."

L. perplexus Hald., 1847 (*Amniscus*), Tr. Am. Phil. Soc. x, 46; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 169.

Length 12.5 mm.; .50 inch. *Habitat.*—Georgia, Florida.

[Testaceous, pubescence cinereous mottled with brown, sides of elytra in front and an oblique streak on the declivity darker; the disc of the thorax with five tubercles, the anterior two of which are best developed, the others sometimes obsolete; elytra coarsely punctured.] "Ham."

L. macula Say, 1826 (*Lamia*), Jour. Acad. Nat. Sci. v, 269; Lec., ed. ii, 327; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 169; *Amniscus sticticus* Hald., Tr. Am. Phil. Soc. x, 48.

Length 4-9 mm.; .16-.36 inch. *Habitat.*—Canada, Maine, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, West Virginia, District of Columbia, Virginia, Michigan, Lake Superior, Wisconsin.

[Form convex, short, robust, brownish, sparsely pubescent, the sides of the thorax broadly, a broad fascia on the declivity of the elytra mostly interrupted by the suture and behind this a blotch on each, white pubescent; a broad brown streak down the middle of thorax bounded on each side by a line of two or three denuded tubercles; a larger tubercle near middle of disc. I have bred this species in great abundance from dead hickory limbs; also from black and from white walnut. It is likewise recorded as bred from beech and chestnut.] "Ham."

LIOPUS Serville.

The following synopsis is based on that of Dr. Horn, Tr. Am. Ent. Soc. viii, 124:

Front flat, mouth in the same plane as the front; antennal joints 6-10 equal; elytra without angular mark posteriorly; sides of thorax arcuate, the spine small and acute; elytra without erect scales.. **variegatus.**

Front convex, mouth slightly retracted; antennal joints 6–10 equal; lateral spine of thorax at a distance from the base.

Elytra with distinct tufts of small, black, erect scales.

Sides of thorax in front of spine arcuate, the spine small, acute and abruptly formed..... **wiltii.**

Sides of thorax oblique from the anterior angles to the tip of the lateral spine.

Form robust; pubescence pale cinereous.

Elytra with one broadly angulated band (resembles *Leptostylus biustus*). **crassulus.**

Elytra with two angulate bands..... **minuens.**

Elytra with a common rounded sutural spot behind the middle black. **centralis.**

Form slender, pubescence brown, elytra with one band forming a broad angle and with second band less distinct posteriorly. **fascicularis.**

Elytra without tufts of erect scales.

Tibiæ without long flying hairs.

Elytra with a conspicuous arcuate band behind middle..... **schwarzi.**

Elytra with an acutely angular band behind the middle, sometimes wanting..... **alpha.**

Elytra without angular band, a feebly marked transverse band of whitish pubescence..... **punctatus.**

Elytra with a transverse undulate fascia behind middle. **foveatocollis.**

Tibiæ with long flying hairs, especially the posterior..... **setipes.**

Liopus variegatus Hald., 1847 (*Amniscus*), Tr. Am. Phil. Soc. x, 47; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 172; var. *trifasciatus* Hald., l. c.; var. *obscurus* Hald., l. c.

Length 6-12 mm.: .24-.48 inch. *Habitat.*—Canada, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, West Virginia, District of Columbia, Virginia, Alabama, Louisiana, Texas, Kansas, Illinois, Indiana, Michigan.

[Form moderately robust, a little elongate, surface reddish or yellowish brown; elytra variegated with small yellowish, dark and cinereous points and blotches, on the disc two costæ which unite near apex, and are crossed behind middle by a dark blotch behind which is a patch of gray pubescence.

Var. *trifasciatus* has on the elytra three irregular dark brown fasciæ.

Var. *obscurus* is very dark brown, with three indistinct black fasciæ; beneath blackish brown.

Breeds under bark of *Negundo aceroides* (Chittenden).] "Ham."

L. wiltii Horn, 1880, Tr. Am. Ent. Soc. viii, 124.

Length 9 mm.; .36 inch. *Habitat.*—Texas.

[Form as in *variegatus*, but more convex; the pubescence is gray maculated with small dark spots both on thorax and elytra; elytra with a broad band behind the base not reaching the suture, an angular oblique band at apical third and behind this another interrupted nearly transverse one, black; each with three subcostæ, not always evident, on which are black tuberculiform spots, and external to these two other rows. This species appears to be very uniform in all characters.] "Ham."

L. crassulus Lec., 1873, New Spec. Ceramb. (S. M. C. No. 264) p. 235; Horn, Tr. Am. Ent. Soc. viii, 125; *mimeticus* Casey, An. N. Y. Acad. Sci. 1891, vi, 48; Proc. Cal. Acad. Sci. ser. iv, 339.

Length 6-6.5 mm.; .24-.26 mm. *Habitat.*—Lower California, Cape San Lucas, Texas, District of Columbia, New Jersey.

[Robust, convex, surface when denuded piceous, sometimes paler, clothed with short cinereous pubescence. Head minutely densely punctulate; antennæ one-half longer than the body, annulate with black at the incisures and spotted above, scape and joints 3-4 subequal, joints beyond the fourth pale tinged with rufous. Thorax transverse, nearly twice as wide as long, and nearly as wide as the elytra, pubescence nearly uniform, convex, scarcely punctulate, spiniform tubercle in advance of basal third: scutellum rounded behind, narrowly bordered with black. Elytra slightly obliquely impressed each side of scutellum, moderately coarsely punctured, punctures gradually obsolescent toward apex, which is slightly obliquely truncate; the suture, three slightly elevated lines, the humeral line and margin each bearing a row of sparsely placed setigerous black points; pubescence cinereous, variegated with denudations; humeral angles black, polished; a large denuded blotch on each side in front of middle, behind middle with the

convexity anterior a deep, arcuate, denuded black band attaining the middle of each elytron, external to which is a short transverse band, underside with fine dense, uniform pubescence. Legs spotted, femora clavate, distal end luteous, tarsi and apex of tibiæ black. Similar to *Leptostylus biustus*.

This species is variable, frequently the raised lines on the elytra are wanting, and scarcely any of the black points present; the arcuate band may exist merely in a trace. The type was an imperfect example from Lower California, but others have since been taken there. Breeds in the dead twigs of *Celtis texana* (Schwarz .] "Ham."

[**L. minuens** n. sp. *Habitat.* – Florida (Lake Worth, Biscayne Bay).

Form robust, slightly elongate, slightly depressed, pubescence cinereous, exceedingly fine, short and inconspicuous. Head finely punctate, indented between the antennæ, front convex. antennæ (female) a little longer than the body, (male) one-half longer, joints beyond the fourth subequal, third a little longer than the fourth, annulate at the incisures and spotted with black on the upperside. Thorax one-half wider than long, sides oblique to front from the summit of the lateral tubercle, which is near the base and sometimes spinose, sometimes not; disc minutely punctate, a broad fuscous stripe down the middle, in which are four minute denuded black points not always visible; scutellum fuscous, rounded; elytra with a flattened area behind the scutellum, on each side four lines of distant penicillate black points, one of which is on the suture and two on vaguely elevated lines, in front of the declivity a narrow angulated dark line sometimes scarcely evident, behind which is an oblique band not attaining suture nor margin, a fuscous stripe on the disc in front of the angulated line is sometimes present, tips narrowly truncate, punctuation not coarse nor close. Legs spotted with fuscous, tarsi black: femora short, strongly clavate. Length 3.5–4.5 mm.; .14–.18 inch.

Taken abundantly at Lake Worth, Florida, on the dead vines of *Melothria pendula*, but it probably breeds like its congeners in the limbs of trees, Bay Biscayne (Schwarz). In an example from Mr. Schwarz, taken at Lake Worth, there is on the elytra a broad, black, denuded sutural stripe from base to apical third, probably only an individual variation.] "Ham."

L. centralis Lec., 1884, Trans. Am. Ent. Soc. xii, 24.

Length 6.5 mm.; .26 inch. *Habitat.*—Arizona.

[Form stout, as in *crassulus*, pubescence pale gray mottled with dark spots; on the elytra are small tufts of black scales, a small spot behind middle, a lateral one in front of middle and two clouds behind the middle, dark.] "Ham."

L. fascicularis Harris, 1836 (*Mesosa*), Tr. Hartf. Soc. Nat. Hist. i, p. 68, pl., fig. 9; *xanthoxyli* Shimer, 1867, Tr. Am. Ent. Soc. ii, 7; Packard, Forest Insects, p. 659 (Bul. 7, 5th Rep. U. S. Ent. Commis.).

Length 5–6 mm.; .20–.24 inch. *Habitat.*—Wisconsin, Michigan, Illinois, Ohio, New York, New Jersey, Florida.

[Without close inspection this species may readily be mistaken for some of the forms of *alpha;* the elytra are moderately coarsely and rather closely punctured to apex, on each are three slightly elevated lines the inner and outer of which unite before the apex; on these and also along the suture are sparsely placed, minute tufts of erect black scales, the two bands on the elytra while not arcuate, are very widely angulate. These characters are taken from the form *xanthoxyli.* Breeds in the wood of dead prickly ash (Shimer).] "Ham."

[**L. schwarzi** n. sp. Length 6.5 mm.; .26 inch.

Very robust, elongate, convex, brownish when denuded, densely clothed with fine whitish gray pubescence concealing the punctures; antennæ a little longer than the body, incisures black, upperside spotted; thorax wider than long, basal constriction deep, the tubercles on each side small and pointed, pubescence dense, punctulation fine and close, disc with a tubercle on each side of middle behind front margin and one on the centre; scutellum rounded, pubescent; elytra with margin, suture and four slightly elevated lines on each bearing remotely placed black dots, humeral angles polished black; stripe on margin obscure by denudation, at apical fourth a conspicuous, arcuate, black band attaining the sides, behind this another obscurely fuscous, punctuation fine evanescent toward the apices, which are obliquely truncate; legs luteous, femora fuscous at middle, tarsi and apex of tibiæ black, abdomen finely punctured, pubescence rather sparse.

Described from a single example taken at Key West, Florida, by Mr. E. A. Schwarz, and now in his collection.] "Ham."

[**L. alpha** Say, 1827 (*Lamia*), Jour. Ac. Nat. Sci. v, 270; Lec., ed. ii, 329; *Amniscus lateralis* Hald., Tr. Am. Phil. Soc. x, 48; *A. vicinus* Hald., l. c. p. 49; *A. divergens* Hald., l. c. 49; *Liopus alpha. misellus* Lec.; *rusticus* Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 173.

Length 4-7 mm.; .16-.28 inch. *Habitat.*—Canada, Massachusetts, New York, New Jersey, District of Columbia, Georgia, Florida, West Virginia, Pennsylvania, Ohio, Michigan, Illinois, Kansas, Texas.

Cinereus is here united to *alpha.* The distinction as given by Dr. Horn is feeble:

Surface finely punctured, behind the band almost impunctured.....**alpha.**
Surface more coarsely punctured, behind the band very distinctly so.**cinereus.**

Sets can be selected with the above characters, but between them in a large series many gradations occur which, without violence, cannot be assigned to either. The individuals are protean in form, size, sculpture, vestiture and color, and the result of attempts to separate them into races has not been satisfactory. Say describes the species as follows:

"Elytra each with a white oblique line extending backwards from the middle of the suture. Body dull reddish brown; head longitudinally deeply indented on the vertex; antennæ considerably longer than the body; incisures blackish; thorax above destitute of tubercles, but with three small black spots placed 2, 1;

a short tubercle abruptly acute at tip each side before the posterior angles, which are emarginate; posterior margin with a transverse indented line; scutel blackish; elytra irregularly punctured; a few black dots, consisting of tufts of hair, chiefly along the suture; region of the scutel dusky; a blackish marginal abbreviated line from the humerus; a blackish line margined with gray, extends from the middle of the suture, obliquely backwards, towards the exterior margin. Not rare in Pennsylvania, also in N. W. Territory."

Some of the variations are:

a. Elongate, surface color cinereous, densely clothed with fine grayish pubescence, angular band of elytra very acute, punctuation fine, nearly obliterated behind, four rows of minute black dots.

b. Less elongate, surface color cinereous, pubescence shorter and less dense, punctuation coarser, evident behind the elytral angular band, rows of black dots much interrupted, and in some examples obsolescent.

c. Surface color reddish testaceous, pubescence short and inconspicuous punctuation of elytra moderately coarse, a little finer toward apex; black dots sparse; three slightly elevated lines are present in some examples.

d. Small (.16 inch), robust, surface reddish brown, rather coarsely punctured, pubescence rather sparse, elytral band mostly wanting, or existing only in a trace, occasionally well marked.

e. Var. *floridanus.* Length .16–.22 inch. Surface reddish brown, antennæ annulate, joints spotted with fuscous; four conspicuous series of black dots on each elytron, punctuation not much finer a little sparser toward apex; the posterior band is more obtusely angled than usual, but not so much so as in *fascicularis,* which seems to be scarcely more than a variety of *alpha.* Taken abundantly by Mr. Schwarz at Bay Biscayne, Florida.] "Ham."

L. punctatus Hald., 1847 (*Amniscus*), Trans. Am. Phil. Soc. x, 49.
Length 5–6 mm.; .20–.25 inch. *Habitat.*—Wisconsin, Canada, New York, New Jersey.

[This differs from *alpha* chiefly by the absence of the angular line on the elytra, which is replaced by an obscure transverse band of gray.] "Ham."

[**L. foveatocollis** n. sp. Length 3.5–5 mm.; .14–.20 inch.
Elongate, narrow, a little depressed, testaceous, pubescence short, fine and inconspicuous, elytra ornamented; antennæ rufotestaceous, not annulate, twice longer than the body in both sexes; thorax more than one-half wider than long, evenly rounded on the sides, which are strongly spinose, disc smooth, without tubercles, spots or medial line, a round fovea on each side of middle in front of base, some inconspicuous patches of denser white pubescence, punctulation dense,

nearly invisible; elytra smooth, punctuation fine, obsolete toward the tips, which are obliquely truncate, ornamentation variable, but always on each behind middle a conspicuous M-like fuscous mark bordered in front with white, behind which are several indefinite fuscous spots, the margins are more or less fuscous with pale indentations, on each side of the scutellum two short stripes which may be prolonged backward interruptly; underside and legs fusco-luteous.

In this species there is no trace of black points or dots, and the thoracic foveæ is an unusual character. Characterized from five examples taken by Mr. E. A. Schwarz at Biscayne Bay, Florida, now in his collection.] "Ham."

L. setipes Casey, 1891, An. N. Y. Acad. Sci. vi, 48.

Length 7 mm.: .28 inch. *Habitat.*—Texas.

[Described as moderately robust, convex, piceo-testaceous, densely clothed with dark luteous pubescence; elytra coarsely punctate, three costiform lines on each and a large lateral blackish spot, recumbent pubescence unusually long, angulate white fascia behind the middle, tibiæ with long flying hairs.] "Ham."

DECTES Lec.

D. spinosus Say, 1827 (*Lamia*), Jour. Acad. Sci. v, 271; Lec., ed. ii, 330; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 144; *texanus* Lec., 1862, Proc. Ac. Nat. Sci. p. 39.

Length 8–10 mm.; .32–.40 inch. *Habitat.*—Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Louisiana, Texas, New Mexico, Colorado, Iowa.

[Elongate, cylindrical, concolorous, piceous, densely cinereo-pubescent throughout; antennæ longer than the body, annulate; elytra moderately punctured, each puncture bearing a suberect black hair; female with a short, black, exserted ovipositor. A neat insect, resembling *Saperda concolor;* abundant. Breeds in the stems of *Ambrosia*, especially *artemisiæfolia* (ragweed), in which the larvæ hibernate.] "Ham."

MECOTETARTUS Bates.

In this genus the male antennæ are four or five times as long as the body, ciliate beneath, the third joint reaches the extremity of the elytra, the fourth joint three times longer than the third, with an apical tuft of stiff black hairs, the seven following united not longer than the fourth. The elytra are parallel, a little compressed at the sides and obliquely truncate at apex; the prothoracic spine is near the base.

M. antennatus Bates, 1872, Tr. Ent. Soc. London, p. 213; *Eutessus asper* Lec., Class. 1873, p. 339; New Species (S. M. C. No. 264), p. 235.

Length 14 mm.; .56 inch. *Habitat.*—Lower California to Chontales, Nicaragua.

"Black, pubescence cinereous, dense and short, not intermixed with hairs; thoracic surface a little inequal, sparsely punctured, variegated; elytra sparsely punctured, with black granulations, a few asperities, a black sublateral vitta extending from the base beyond the middle."—LeConte.

LEPTURGES Bates.

In this genus the sides of the thorax are angulate close to the base; the antennæ are scarcely fimbriate beneath, the pro- and mesosternum linear scarcely separating the coxæ, the first joint of the posterior tarsi is as long as the others united. The following analytical table is that of Dr. Horn (Tr. Am. Ent. Soc. vii, 126), suitably modified:

Lateral prominence of the thorax rather broad and very close to the base. **symmetricus.**

Lateral prominence more slender and acute, the tip recurved, less close to base.

Elytra lineate, eyes prominent..... **megalops.**

Elytra fasciate.

The fascia behind the middle incomplete, broadly interrupted by the suture. **signatus.**

The fascia broad, black and entire, oblique on each elytron, apex not black. **querci.**

The fascia broad, black and entire, transverse, the apex also black. **facetus.**

Elytra cinereous, each maculate with six round black spots; thorax with four spots..... **regularis.**

L. symmetricus Hald., 1847 (*Leiopus*), Tr. Am. Phil. Soc. x, 50; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 171; *Leiopus confluens* Hald., l. c.; *pictus* Lec., l. c.; *angulatus* Lec., l. c. p. 172; *Valenus inornatus* Casey, An. N. Y. Acad. Sci. vi, 50.

Length 7-9 mm.; .28-.36 inch. *Habitat.*—Iowa, Wisconsin, Michigan, Canada, New York, New Jersey, Pennsylvania, West Virginia, Georgia, Florida, Louisiana, Kansas, Texas.

[The synonymy is less from differences in taxonomy than from color ornamentations; *pictus*, the form most commonly met with is pale, with short gray pubescence; four spots on the thorax, two spots on each elytron near to the base and close to the suture, a lateral stripe before middle connected with a broad, irregular, transverse band seldom attaining the suture, and three spots in front of apex arranged in the arc of a circle often united, black. From this these markings vary in both directions, so as to become nearly suffused or entirely wanting, as in *inornatus*.] "Ham."

L. megalops n. sp.

[Elongate, narrow, parallel, piceous black throughout, shining with dull luster, pubescence cinereous, very fine, short and inconspicuous above, longer on the abdomen, two obscure, narrow, interrupted lines of grayish or reddish pubescence on the disc of each elytron. Head smooth, minutely punctate; front convex,

with fine median line; eyes moderately coarsely granulate, large, prominent, not very deeply emarginate nor widely separated above; antennæ twice as long as the body, not annulate. Thorax nearly twice wider than long, smooth, scarcely perceptibly punctulate, a basal marginal row of punctures, spine strong, prominent; scutellum rounded, punctate. Elytra with moderately fine, evenly disposed punctures gradually finer toward apex, before which they become obsolete, apices obtusely rounded. Length 5–6 mm.; .20–.24 inch. *Habitat.*—Florida (Bay Biscayne).

Described from two examples without sexual distinction. The types are now in the collection of Mr. E. A. Schwarz.] "Ham."

L. signatus Lec., Jour. Acad. Nat. Sci. ser. 2. ii, 171.

Length 6–6.5 mm.: .24–.26 inch. *Habitat.*—Canada. New York, New Jersey, Pennsylvania, Ohio, West Virginia, Georgia, Florida, Iowa, Illinois.

[The elytra in this species are ornamented each side with a spot near base, one at the side a little behind it, a smaller spot at middle near suture and another on the disc a little in advance, behind this a broad band not attaining the suture prolonged backward along the margin arcuately till near apex, where it curves suddenly inward and forward forming a c-like figure, black. These markings are seemingly quite constant. Mr. Leng has taken this species near New York on dead twigs of sumach.] "Ham."

L. quercí Fitch, 1858, Tr. N. Y. State Agric. Soc. p. 796; *seperatum* p. 16.

Length 4.5–6 mm.; .18–.24 inch. *Habitat.*—Canada, Michigan, New York, New Jersey, Pennsylvania, Ohio.

[Thorax dark, with a narrow discal line of gray pubescence, and a broad one on the sides; elytra light colored, bearing dark markings as follows: suture to posterior band, joining the suture at base a quadrate spot emarginate behind, a lateral stripe in front of middle, to which is joined a shorter one emarginate behind, a small discal spot at middle, a sutural one frequently joined to an irregular broad band behind the middle extending a little on the sides forward and backward, and a submarginal spot near apex; a large apical area light colored; antennæ not annulate, two and one-half times longer than the body. I have raised this species abundantly from dead oak limbs, and likewise from hickory; from butternut (*Juglans cinerea*), Chittenden.] "Ham."

L. facetus Say, 1827 (*Lamia*), Jour. Acad. Nat. Sci. v, 221; Lec., ed. ii. 329; Lec., Jour. Ac. Nat. Sci. ser. ii, 171; Fitch, Rep. iv, p. 65 (separ.).

Length 3–4 mm.; .12–.16 inch. *Habitat.*—Massachusetts, New York, New Jersey, Pennsylvania, West Virginia, Ohio, Michigan.

[This small species is black, except a broad L-shaped mark extending obliquely from within the humerus to the suture, the arm

not reaching the side, and a bilunate fascia on the declivity, palid; the legs and antennæ are obscure and not annulated, the latter more than twice longer than the body. Bred abundantly from dead beech and hickory.] "Ham."

L. regularis Lec., 1862, Proc. Acad. Nat. Sci. p. 39.
Length 7–9 mm.; .28–.36 inch. *Habitat.*—Kentucky, Ohio.

This is a beautiful species, having the thorax ornamented with four round black spots and the elytra each with six. This and the three preceding have the markings of the elytra figured by Dr. Horn, Tr. Am. Ent. Soc. viii, pl. ii.

HYPERPLATYS Hald.

Differs from *Lepturges* by the form of the elytra, the sides being abruptly declivous and limited by an acute ridge. The body above is clothed more or less densely with cinereous pubescence, more or less maculate as follows: four round spots forming a transverse arc on the thorax, rarely an additional spot before the scutellum; a larger spot, sometimes wanting, sometimes enlarged to a short transverse fascia, and numerous smaller spots on each elytron. Rarely the maculation disappears entirely and the upper surface becomes black. These differences, as well as those existing in the width of the body, the length of the antennæ, the color of the legs, and the spinous prolongation of the elytra merge imperceptibly in a large series and appear to me to indicate only races of one species separable only when captured at places geographically distant. The races known to me are as follows:

Body above maculate.
- Larger, legs pale, entire body pale with cinereous pubescence. **californicus.**
- Smaller, legs dark, color darker; elytra twice as long as wide... **aspersus.**
- Smaller, legs dark, color darker; elytra not as long as wide.... **maculatus.**
- Smaller, legs partly rufous, darker; spots confluent..... **nigrellus.**

Body above black..... **femoralis.**

And I consider all as one species under the oldest name, *H. aspersus* Say.

H. aspersus Say, 1823 (*Lamia*), Jour. Acad. Nat. Sci. iii, 330; Lec., ed. ii, 187; *maculatus* Hald., Trans. Am. Phil. Soc. x, 49; Lec., Jour. Acad. Nat. Sci ser. 2d, ii, 170; *nigrellus* Hald. l. c.; *femoralis* Hald., l. c.; Lec., l. c. p. 171; *californicus* Casey, Ann. N. Y. Acad. Sci. vi, 51.

Length 3.5—6.5 mm. = .14–.26 inch. *Habitat.*—Canada, Maine, Vermont, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, District of Columbia, Georgia, Alabama, Mississippi, Louisiana, Missouri, Michigan Wisconsin, Iowa, California.

[By the table the several forms may be readily separated into races or species as they may be viewed. In *aspersus* the antennæ ♂ and ♀ are more than twice as long as the body, and on the elytra are three rows of small spots (sometimes indistinct) placed on three lines a little paler than the general surface; in *maculatus* the antennæ of ♂ are about twice as long as the body and the elytral spots much larger and irregularly disposed; in *nigrellus* the antennæ are as in *aspersus*, and the elytral spots larger than in *maculatus*, some of them frequently confluent; examples of *californicus* received recently by Mr. Leng, taken in Santa Cruz Mountains by Mr. Koebele, show that it does not differ from the eastern races except as stated in the table. Breeds in the dry twigs of *Populus monilifera* and *tremuloides* (Schwarz); in apple twigs (Riley)] "Ham."

Acanthocini.

The presence of an ovipositor in the female is the chief character separating this group from the *Liopi*. The genera as defined by Dr. Geo. H. Horn and Messrs. Bates and Gahan in Tr. Am. Ent. Soc. viii, 128; xiii, Proc. Section, p. xii; and xv, 300, are as follows:

Body above with erect hairs mixed with the pubescence.

Mesosternum broad; antennæ not much longer than the body and not ciliate beneath, except feebly on the scape.....**Graphisurus.**

Mesosternum narrow; antennæ twice as long as the body, ♂, and very slender, ciliate beneath.....**Ceratographis.**

Body above pubescent, without erect hairs.

Mesosternum moderate; antennæ very long, joints 3–4 at least densely fringed beneath with short hairs; lateral tubercle of thorax distant from base. **Acanthocinus.**

Mesosternum broad; antennæ moderate, not fringed beneath; lateral tubercle of thorax close to the base.....**Nyssodrys.**

GRAPHISURUS Lacord. *Urographis* Horn.

This genus at present contains two species:

G. triangulifer Hald, 1847 (*Acanthoderes*), Tr. Am. Phil. Soc. x, 45; Lec., 1852, Jour. Acad. Nat. Sci. ser. 2d, ii, 174.

Length 13 mm. = .52 inch. *Habitat.*—Ohio, Missouri, Texas, Louisiana, Alabama, Georgia.

[The surface color is reddish brown; the fifth ventral in the female is prolonged and triangularly emarginate at tip, the tarsi in both sexes are alike in width, the antennæ are annulate, the thorax has a broad dark stripe down the middle extending on the elytra behind the scutellum; the surface of the elytra is sprinkled over with small black dots and blotches, and behind the middle from the sides but

not reaching the suture is a broad blotch with several angles, behind which are one or two smaller spots on the margin. The larva was found boring under the bark of *Celtis texana* on injured trees, by Mr. Schwarz.] "Ham."

G. fasciatus DeG. 1775 (*Cerambyx*), Mem. v, 114, pl. 14; Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 175; *mixtus* Fab., Ent. Syst. Suppl. p. 144; *pensylvanicus* Gmel. ed. Linn. i, 4, p. 1863; *despectus* Lec., Agass. Lake Superior, p. 234; *pusillus* ‡ Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 175; Fitch, Rep. v (An. Rep. N. Y. State Ag. Soc. 1858, p. 794); separat. p. 14.

Length 8-14 mm. = .32-.56 inch. *Habitat.*—Canada, Maine, New Hampshire, Vermont, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, West Virginia, Florida, Louisiana, Kansas, Lake Superior, Michigan, Wisconsin.

[Surface color whitish testaceous, last ventral in ♀ prolonged and deeply cleft at tip, anterior and middle tarsi of ♂ broader than in ♀ and ciliate at the sides, antennæ and legs annulate; thorax bilineate with black, surface of elytra sprinkled with small dark dots and blotches, the latter forming an irregular fascia in front of middle and another more conspicuous in front of the declivity, both frequently obscure or wanting. The name *despectus* (*pusillus* ‡) was applied to small individuals without the band. An abundant species. Breeds in the bark of recently felled or deadened biennial oaks (*Quercus tinctoria*, etc.); also in that of maple (*Acer*), Packard.] "Ham."

CERATOGRAPHIS Gahan.

C. biguttata Lec., 1852 (*Liopus*), Jour. Ac. Nat. Sci. ser. 2d, ii, 172.

Length 9 mm. = .36 inch. *Habitat.*—Canada, New Hampshire, Massachusetts, New Jersey, Pennsylvania, Lake Superior, Michigan. Rather rare.

[Form elongate, scarcely depressed, testaceous, pubescence brownish; elytra indistinctly mottled, each with an oblique black band behind the middle.] "Ham."

ACANTHOCINUS Steph.

The following synopsis is by Dr. Horn, Trans. Am. Ent. Soc. viii, 130:

Elytra punctured beyond the middle; antennæ of ♂ not nodose.
Elytra not distinctly costulate.....**obsoletus.**
Elytra distinctly tricostulate.....**obliquus.**
Elytra scarcely at all punctured behind middle; antennæ ♂ nodose.
Elytra scarcely punctured at base, surface with three dark oblique bands.
spectabilis.
Elytra feebly punctured at base, surface with linear and arrow-shaped velvety spaces.....**nodosus.**

A. obsoletus Oliv., 1795 (*Cerambyx*), Ent. iv, 67, p. 130, pl. 13, fig. 90; *pusillus* Kirby, Faun. Bor. iv, 169; Bethune, ed. p. 75.

Length 10–15 mm. = .40–.60 inch. *Habitat.*—Canada, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, North Carolina, Georgia, Florida, Wisconsin.

[Form elongate, surface color whitish testaceous; thorax dark, with an apical and basal transverse row of four round gray spots, only seen in good examples; elytra coarsely distantly punctured, faint evidence of a costa on each side, some small blotches and three undulated fasciæ, dark; the fasciæ are often broken into blotches.] "Ham."

A. obliquus Lec., 1862, Proc. Acad. Nat. Sci. p. 39.

Length 12–16 mm. = .48–.64 inch. *Habitat.*—California, Washington, Utah, Colorado, Kansas, New Mexico, Arizona.

[Differs from *obsoletus* by having on each elytron three raised lines, on which are rows of black points; by having only two fasciæ, the anterior of which is one-third behind the base and extends on the sides to base; and by the much finer, closer punctuation.] "Ham."

A. spectabilis Lec., 1854 (*Aedilis*), Proc. Ac. Nat. Sci. Phila. vii, 82; Coleopt. Kansas, 1859, p. 22, pl. 2, fig. 16; *Eutrypanus princeps* Walker, Nat. in Vanc. 1866, ii, 331.

Length 18–22 mm. = .72–1.12 inch. *Habitat.*—Vancouver Island, Washington, Oregon, Nevada, Colorado, New Mexico, Arizona.

[This large species has the antennæ near three and one-half times longer than the body, ♂, and about twice as long, ♀; in addition to the three undulated fasciæ of the elytra there is an antebasal narrower one. This species breeds in pine stumps and logs.] "Ham."

A. nodosus Fab., 1775 (*Lamia*), Syst. Ent. p. 164; Oliv., Ent. iv, 67, p. 75, pl. 14, fig. 103; Lec. (*Aedilis*), Jour. Acad. Nat. Sci. 2d ser. ii, 174; *bifidator* ♀, Fab., Syst. El. ii, 286; *Astynomus* Dej., Cat. 3d ed. 363.

Length 20–25 mm. = .80–1.00 inch. *Habitat.*—New Jersey, Pennsylvania, Maryland, Florida.

[This species is wider and more depressed than the preceding and with a different facies; the antennæ, ♂ and ♀, are of the same length as in the preceding, but in that the distal end of the fifth joint is nodose-like from some short bristles, while in this the distal end of the third and fourth joints are nodose from enlargement; the surface color is luteous-white, the pubescence grayish white and exceedingly dense and short; there are on the elytra each side four penicillate elevated lines the inner two of which are united before apex, where they are ornamented with an arrowhead-shaped velvety black mark inclosing a white spot; a short line at base on disc and

the sides of the thorax and sides of elytra to middle also velvety black. Breeds in logs of yellow pine, the larva boring under the bark (Schwarz).] "Ham."

NYSSODRYS Bates.

[This genus at present is represented in the United States by one species.

N. haldemani Lec., 1852 (*Liopus*), Jour. Acad. Nat. Sci. ser. 2d, ii, 173; *contempta* Bates, Ann. and mag. Lond. ser. 3, xiii, 152; Tr. Ent. Soc. London, p. 220.

Length 6.5–8 mm. = .36-.32 inch. *Habitat.*—Pennsylvania, Georgia, Alabama.

Brown, thorax ornamented with four yellowish lines, the inner two conspicuous; the elytra are rather convex and narrowed to apex from before middle, on each side two costæ united before tip, and ornamented with irregular yellowish streaks.] "Ham."

Tribe IX. Pogonocherini.

[The tribe as here defined, contains species of small size, and usually with long erect (flying) hairs in addition to the ordinary pubescence. They are related to the *Acanthoderini*, having divaricate claws, a rather stout body and the scape of the antennæ without cicatrix. They differ from *Liopus* in the shorter and stouter scape of the antennæ. The arrangement of the genera is that in the "Classification" and divided into groups, Tapeinæ being added.

The posterior coxæ widely separated, antennæ not ciliate beneath. VI. TAPEINÆ.
The posterior coxæ approximate; narrowly separated.
Middle tibiæ with external sinus: thighs clavate; vertex concave; antennal tubercles prominent 2.
Middle tibiæ without external sinus; thighs not clavate, vertex flat or convex; antennal tubercles not prominent 5.
Middle tibiæ with external sinus; thighs stout, not clavate.
Eyes coarsely granulate, vertex convex V. ZAPLOI.
2. Eyes moderately granulated, scape of antennæ uniformly punctured 3.
Eyes coarsely granulated; scape with large punctures intermixed 4.
3. Lower lobe of eyes elongate II. HOPLOSIÆ.
Lower lobe of eyes as wide as long III. POGONOCHERI.
4. Lower lobe of eyes broader than long I. ESTOLÆ.
5. Eyes coarsely granulated, lower lobe as wide as long; scape of antennæ uniformly punctured IV. EUPOGONII.

Group TAPEINÆ.

Peritapnia Horn, represents this group in our fauna, and is placed provisionally here, having many characters of the Tribe. The anterior coxal cavities are slightly angulate, the middle closed externally, the middle tibiæ with a sinus externally near the apex; the

claws are divaricate; the head is similar in the sexes, eyes coarsely granulate and deeply emarginate, front broad, vertical, antennæ widely separated at base, longer than the body in both sexes, not ciliate beneath; thorax strongly angulate at the sides; scutellum semicircular; apices of the elytra entire, rounded; coxæ all widely separated.

P. fabra Horn, 1894, Coleop. Baja Cal. (Pr. Cal. Acad. Sci. ser. 2, iv, 404.
Length 9.5 mm. = .38 inch. *Habitat.*—Arizona south of Tucson.
"Dull brown, clothed with short, fine, brownish pubescence; elytra with short, erect black hairs, arising from evenly disposed muricate punctures. Head finely and moderately closely punctate. Thorax much broader than long, sides strongly angulate at middle, in front of angulation the sides are oblique, behind sinuate, surface finely punctulate and pubescent, with short erect hairs arising from sparsely placed coarser punctures. Elytra very minutely punctulate and finely pubescent, with erect hairs arising from muricate punctures equally placed over the surface, but not in striæ. Body beneath and legs paler, sparsely finely punctate and pubescent," Horn.] "Ham."

ESTOLA Fairm. is the only genus in the group ESTOLÆ.

E. sordida Lec., 1873, New Species (S. M. C. No. 264), p. 237.
Length 8–13 mm. = .32–.52 inch. *Habitat.*—Cape San Lucas, L. Cal.

Uniformly clothed with yellowish brown recumbent hair intermixed with short, suberect, gray hairs proceeding from the punctures; prothorax armed with long, acute, lateral spine; elytra parallel, rounded at apex; antennæ one-half longer in ♂ and but little longer than the body in ♀.

HOPLOSIA Muls. alone represents group HOPLOSIÆ.

H. nubila Lec., 1862, Proc. Ac. Phil. p. 39.
Length 9–12 mm. = .36–.48 inch. *Habitat.*—New York, Canada, Michigan, Illinois.

The pubescence is gray mottled with black, and there are short, scattered, erect hairs on the elytra; the antennæ are thinly fringed beneath with hair; the lateral spines of the prothorax are large and situated at the middle; elytra subparallel, separated, rounded at apex; antennæ longer than the body ♂, about as long as body ♀, the scape is stout, clavate, much shorter than third joint. Breeds in dry beech twigs in Michigan (Schwarz); baswood (*Tilia americana*) LeConte.] "Ham."

Group III. POGONOCHERI.

Two genera occur in our fauna separated as follows:

Flying hairs long; prothorax with lateral spines.....**Pogonocherus.**
Prothorax with feebly rounded sides, pubescence short.....**Ecyrus.**

POGONOCHERUS Latrl.

The following synopsis follows that by Dr. Horn (Trans. Am. Ent. Soc. vii, p. 42):

Elytra truncate at tip and more or less dentate.....1.
Elytra rounded at tip.....2.
1. Legs and sides of elytra with long flying hairs; elytra with moderately large umbone at middle of base.....**crinitus.**
Legs and elytra without flying hairs.
Elytra with lateral costæ well marked and with a row of five or six tufts of erect black setæ.....**penicillatus.**
Elytra without lateral costæ and tufts.....**mixtus.**
2. Elytra with moderately long hairs on the upper surface.
Scape of antennæ short, stout; lateral spine moderate, elytral punctures [obsolete at apical third].....**oregonus.**
Scape of antennæ slender, attaining thoracic spine, which is long and acute.....**volitans.**

P. crinitus Lec., 1873, New Species (S. M. C. No. 264), p. 237.
Length 7–9 mm. = .28–.36 inch. *Habitat.*—Vancouver Island; California.

[This species is different in facies from its congeners; it is densely clothed with ash-gray pubescence, a little dotted with white, but without conspicuous spots, and the sides of the thorax are very strongly armed.] "Ham."

P. penicillatus Lec., 1850, Agass. Lake Sup. p. 234; Jour. Ac. Nat. Sci. ser. 2. ii, 160.
Length 6 mm. = .24 inch. *Habitat.*—Maine, New Hampshire, Michigan, Lake Superior, Colorado.

[This species is piceous, densely clothed with gray pubescence, on the elytra behind the base; the disc of the thorax is strongly tuberculate; the antennæ and feet are annulate.] "Ham."

P. mixtus Hald., 1847, Tr. Am. Phil. Soc. x, 50; Lec., Jour. Ac. Nat. Sci. ser. ii, 160; *parvulus* Lec., l. c.; *simplex* Lec., 1873, New Species (S. M. C. No. 264), p. 237.
Length 5–7 mm. = .20–.28 inch. *Habitat.*—Canada, Maine, New Hampshire, Massachusetts, New York, New Jersey, Pennsylvania, Michigan, Wisconsin, Missouri, Kansas, Colorado, Montana, Idaho, California, Arizona.

[This species in general is piceous black, variegated with white pubescence and hispid with sparse, erect black hairs. In *mixtus* there is a broad band of white pubescence before the middle from the sides seldom attaining the suture and sometimes with a branch to the base inside of the humerus, also a couple of narrow approximate fasciæ on the declivity; the elytra are striately punctured, a little confused near suture. In *simplex* (the western form) the basal band covers the suture extending forward inside of humerus, but

does not attain the margin, the apex behind the declivity is white mottled with dark pubescence, and the striate punctuation of the elytra is feebler and more confused. In *parvulus* the punctuation is as in *mixtus*, but there are no well-marked bands of pubescence, the surface of the elytra being irregularly mottled. The thorax of the ♂ is very closely aciculate, that of ♀ smooth. On pear trees (Leng); in dead branches of willow (Chittenden).] "Ham."

P. oregonus Lec., 1861, Proc. Acad. Sci. Phila. p. 254.
Length 8-9 mm. = .32-.36 inch. *Habitat.*—Oregon, California, Idaho (Beaver Canon) Schwarz.

[Black, erect black hairs very long, thoracic disc without distinct tuberculation; elytra parallel, rounded at apex, sides nearly vertical, separated from the disc by a humeral carina, punctuation coarse, sparse, evanescent at apical third, three rows of small black pubescent points, these are sometimes absent, sometimes strong and mixed with white simulating costæ; thorax, scutellar area of the elytra, broad undulated band across middle and many spots in the apical area black from denudation; basal and apical thirds, except the denuded spots, clothed with white pubescence; antennæ slender, testaceous, the joints fuscous at apex; legs spotted and with long flying white hairs.] "Ham."

P. volitans Lec., 1873 (*Lophopœum*), New Species (S. M. C. No. 264), p. 232.
Length 5-8 mm. = .20-.32 inch. *Habitat.*—Lower California, Cape San Lucas.

[Clothed with pale brown pubescence, which is mottled on the thorax with darker; the base, sides and apical region of the elytra are dark and mottled with still darker spots; an elongate common stripe of gray emarginate in front and at the sides extends from the humeri to apical third, and is limited externally in its basal half by the inner humeral carina.] "Ham."

ECYRUS LeConte.

[In this genus the antennæ are very hairy, the anterior tibiæ suddenly thickened at apex, the thorax cylindrical and unarmed, the femora clavate, the vertex between the eyes impressed, and the tips of the elytra roundedly truncate.

The three species at present known in our fauna may be separated thus:

Pubescence silvery white.....**fasciatus.**
Pubescence cinereous.
Thorax moderately punctured.....**dasycerus.**
Thorax with only a few punctures at the sides.....**exiguus.**

E. fasciatus n. sp.

Length 10 mm. = .40 inch. *Habitat.*—Texas (Brownsville).

Body stout, brownish piceous, pubescence white, in part short and sparse, showing the surface; in part longer and denser concealing the punctures; head densely pubescent, scarcely punctulate, eyes but narrowly separated above; antennæ shorter than the body in the female, longer in the male, pubescent white with long hairs beneath, annulate at the incisures; thorax scarcely wider than long, sides parallel, variegated with patches of denser pubescence, very sparsely punctured, disc convex, with a shallow median groove, in which is a short, polished black line; scutellum quadrate, obtusely rounded behind; elytra with large ocellate punctures more or less confluent, arranged in striæ on the disc, a little confused toward the sides, second interval with three large fascicular tufts of coarse black bristles, one near base, one at middle and one at apical third, a basal fascia, sides and apical half clothed with white pubescence concealing the punctures, a broad band behind the basal fascia not attaining the sides extending arcuately backward to the middle piceous brown; surface with short, semi-erect black hairs sparsely disposed; underside variegated by denser or sparser pubescence; hind tibiæ with white flying hairs.

Described from a male and female taken at Brownsville, Texas, by Mr. C. H. T. Townsend, permission to describe which is due to the courtesy of Mr. L. O. Howard, of the Deparment of Agriculture, through the intercession of Mr. E. A. Schwarz. The types are now deposited in the National Museum at Washington.] "Ham."

[**E. dasycerus** Say, 1826 (*Lamia*), Jour. Ac. Nat. Sci. v, 270; Lec., ed. ii, 328; *Exocentrus dasycerus* Hald.; *E. obscurus* Hald., Tr. Am. Phil. Soc. x, 50; Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 160.

Length 6-8 mm. = .24-.32 inch. *Habitat.*—Michigan, Canada, New Hampshire, New York, New Jersey, Pennsylvania, Ohio, West Virginia, North Carolina.

This species is robust, parallel, uniformly cinereous, occiput impressed deeply, antennæ annulate; anterior margin of thorax with two small tubercles at middle, two black facets on middle of disc; the elytra are punctured striately and have four rows on each of erect black fasciculi placed on the suture and three elevated lines; behind the base is a common, narrow, black band, terminating at the middle of the sides.

This species varies from light to dark cinereous. The length given by Say $\frac{3}{20}$ inch. is a misprint for $\frac{3}{10}$ inch. Bred, but not abundantly, from dead hickory limbs.] "Ham."

[**E. exiguus** Lec., 1852, Jour. Ac. Nat. Sci. ser. 2d, ii, 160.

Length 4.5 mm. = .18 inch. *Habitat.*—Ohio, Georgia, Kansas.

Like the preceding species this is also cinereous, but the thorax is scarcely punctured, the elytra are variegated with brownish spots, the elevated lines are scarcely evident, and the tips scarcely truncate;

the antennæ testaceous and scarcely annulate. This seems scarcely more than pauperized individuals of *dasycerus*.] "Ham."

Group IV. EUPOGONII.

[The two genera of this group may be separated as follows:

Body with flying hairs.
Antennæ not longer than the body, stout pilose, joints 5-10 shorter, subequal; thorax spinose on the sides.....**Eupogonius.**
Body without flying hairs.
Antennæ longer than the body, slender, ciliate beneath, outer joints very gradually shorter; thorax unarmed.....**Lypsimena.**

Some of the remarks in the "Classification" under Eupogonii seemingly require revision.] "Ham."

EUPOGONIUS Lec.

The following is the synopsis by Dr. Horn (Trans. Am. Ent. Soc. xii, p. 196):

Lateral spine of thorax acute, well marked.....2.
Lateral spine of thorax small, obtuse.....3.
Elytra pale castaneous, the punctuation not strong, almost obliterated near the apex, the pubescence cinereous or yellowish, forming reticulations more or less transverse.....**tomentosus.**
Elytra piceous, the punctuation coarse, gradually finer, but not obliterated at tip, the pubescence luteous, arranged in irregular small patches.
vestitus.
Elytra nearly black, the punctuation rather coarse, finer at apex, but distinct; the pubescence cinereous, fine and very evenly disposed; thorax sparsely evenly pubescent.....**pubescens.**
Elytra black, coarsely punctured even to the apex, pubescence black and inconspicuous; thorax with a lateral broad line of yellowish pubescence.
subarmatus.

In addition to the recumbent pubescence mentioned in the able table, the entire body, antennæ and legs, have short, erect hair. *E. subarmatus* has great resemblance in aspect to *Amphionycha flammata*.

E. tomentosus Hald., 1849 (*Desmiphora*), Trans. Am. Phil. Soc. x, 50; Lec., Jour. Acad. Nat. Sci. ser. 2d, ii, 159; *pinivora* Fitch, 1857, 4th Rep. separat. p. 26; Trans. N. Y. State Ag. Rep. 1857, p. 712; *Desmiphora* Dej., Cat. 3d ed. 366.

Length 7-8 mm. = .32 inch. *Habitat.*—Canada, Massachusetts, New York, Michigan, Wisconsin, Pennsylvania, New Jersey, Florida.

[A beautifully variegated species shining as if varnished and easily known by the table. Fitch represents his *pinivora* as having the erect hairs on the antennæ and elytra black and not pale as in

tomentosus, but this was only an optical illusion. The larva mines the wood of the pine (Fitch); larva bores in twigs of felled yellow pine (Schwarz); the writer bred it once from dead hickory limbs.] "Ham."

E. vestitus Say, 1827 (*Saperda*), Jour. Acad. Nat. Sci. v, 273; Lec., ed. ii, 331; *Pogonocherus vestitus* Hald., Trans. Am. Phil. Soc. x, 50; *pauper* Lec., Jour. Acad. Nat. Sci. 2d ser. ii, 159.

Length 6–9 mm. = .24–.36 inch. *Habitat.*—Canada, Vermont, Connecticut, Massachusetts, New York, Michigan, Ohio, Pennsylvania, New Jersey, Alabama.

[Piceous, hirsute; thorax coarsely, nearly confluently punctured; the elytra are mottled with small patches of denser yellowish brown pubescence, which, in the individuals named *pauper*, become transverse lines. I have bred it sparingly from dead hickory limbs; hickory (Riley).] "Ham."

E. pubescens Lec., 1873, New Species (S. M. C. No. 264), p. 236.

Length 7–8 mm. = .28–.32 inch. *Habitat.*—Ohio, northern Illinois.

[More slender than *vestitus*, with finer and unmottled pubescence, seems rare.] "Ham."

E. subarmatus Lec., 1859 (*Amphionycha*), Coleop. Kansas, p. 22 (Smithson Cont.); Lec., Proc. Acad. Nat. Sci. 1861, p. 354, note.

Length 7–8 mm. = .28–.32 inch. *Habitat.*—Canada, New Hampshire, New York, Michigan, Wisconsin, Iowa, Illinois, Ohio, West Virginia, Pennsylvania.

[This species is sufficiently well defined by the table; it is altogether black, except the yellow lines on the thorax; there is a deep, wide furrow each side of the suture. I have bred this species from elm (*Ulmus americana*); oviposits in stumps of recently felled elm.] "Ham."

LYPSIMENA Lec.

The two species in our fauna may thus be separated:

Thorax with width and length subequal, a little narrower at base than at apex, sides subsinuate, rather coarsely, very closely punctate.....**fuscata.**

Thorax wider than long, moderately convex, base and apex equal, sides not sinuate, coarsely sparsely punctate.....**californica.**

L. fuscata Lec., 1852, Jour. Acad. Nat. Sci. ser. 2d, ii, 155; Chevrolat, Ann. France, 1862, p. 253; *Lypsimena* † *fuscata* † Dej., Cat. 3d ed. p. 374.

Length 6.5–8 mm. = .26–.32 inch. *Habitat.*—New York, North Carolina, Florida, Cuba.

Brownish piceous throughout, pubescence short, cinereous, not concealing the punctures, which, on the abdomen, are black; the suture of the elytra, and an approximate, more or less interrupted

vitta on each side grayish white; eyes narrowly separated above; antennæ slender, longer than the body, reddish testaceous, fuscous at the articulations; scutellum minute, triangular; elytra a little narrowed posteriorly, apices separately rounded, rather coarsely and closely punctured near base, sparser toward apex; legs not clavate.

L. californica Horn, 1885. Trans. Am. Ent. Soc. xii, 194.
Length 9 mm. = .36 inch. *Habitat.*—San Diego (California).

[This species has not been seen, but is represented by the describer as resembling *fuscata*, but differing in the form and punctuation of the thorax.] "Ham."

ZAPLOUS Lec. Group ZAPLOI.

Z. hubbardi Lec., 1878. Proc. Am. Phil. Soc. xvii, p. 415.
Length 3-5 mm. = .12-.20 inch. *Habitat.*—Florida.
"Brown, clothed with short, prostrate, yellowish gray pubescence, somewhat mottled by unequal distribution. Prothorax very densely, rather finely punctured. Elytra more strongly and less densely punctured; antennæ annulated with black, finely punctulate and pubescent, without mixture of large punctures; frequently beaten from old vines in May."—LeConte's description.

Tribe X. Desmiphorini.

Contains only one species of the genus *Desmiphora*, viz.:

D. mexicana Thom., 1860, Class. Longic. p. 75.
Length 15 mm. = .60 inch. *Habitat.*—Mexico, Texas.

"This insect is remarkable for being covered with very dense brown pubescence, with lines and crests of very long, fine whitish hairs looking like mold. Beneath it is very prettily variegated with darker spots, each surrounded with a white line" ("Class." p. 328).

Tribe XI. Onciderini.

Eyes not very finely granulated, lower lobe elongate; antennæ slender in both sexes, vertex flat **Oncideres.**
Eyes very finely granulated, lower lobe not elongate; antennæ with joints 1-4 thickened and hairy in ♂; vertex deeply concave **Taricanus.**

ONCIDERES Serv.

[Thorax with a distinct lateral spine.
Thorax with a transverse glabrous elevated space; surface densely brownish pubescent, elytra with denuded spots, tuberculiform at base, flat posteriorly **pustulatus.**
Thorax without discal callosities **texanus.**
Thorax with or without distinct lateral spine; three callosities on the disc in a transverse row, sometimes absent **cingulatus.**

O. pustulatus Lec., 1854, Proc. Ac. Nat. Sci. Phil. vii, 82.
Length 19 mm. = .75 inch. *Habitat.*—Texas (Laredo, Brownsville). Rare.

O. texanus Horn, 1885, Tr. Am. Ent. Soc. xii, 195.
Length 15 mm = .60 inch. *Habitat.*—Texas, Kansas.

Clothed with grayish pubescence, the basal fifth and apical third of the elytra darker, four irregular series of round yellowish spots of denser pubescence; thorax distinctly narrowed behind the lateral tubercle, no dorsal callosities, but the median line may be abraded. Feebly distinct from *cingulatus*.

O. cingulatus Say, 1827 (*Saperda*), Jour. Acad. Nat. Sci. v, 272; Lec., ed. ii 330; Hald., Tr. Am. Phil. Soc. x, 52; Lec., Jour. Acad. Nat. Sci. ser. 2d, ii, 165; *putator* Thoms., Physis ii, 81; Horn, Trans. Am. Ent. Soc. xii, 195; *rubiginosus* † Dejean, Cat. 3d ed. p. 369.
Length 14-17 mm. = .56-.68 inch. *Habitat.*—Middle States, New York, New Jersey, Pennsylvania, Louisiana, Texas, Arizona.

Variable in color and sculpture. The pubescence is usually cinereous, very inconspicuous on the basal fifth and apical third of the elytra between which points it is more condensed forming a broad band as in *texana*, and with similar irregular rows of yellow spots. In the form known as *putator*, the integuments are piceo-fuscous, the thorax with a small spine on each side in front of the base and three small black facets on the disc placed transversely, the elytra at base with numerous small granules or tubercles. That known as *cingulatus* is more variable; the pubescence, though usually cinereous, varies to yellowish; the integuments from reddish brown to luteous, the thoracic spine is mostly absent, never conspicuous; the three facets on the disc frequently obsolete, and the basal tubercles of the elytra only occasionally present, and then mostly in examples with a thoracic spine or tubercle. I saw two examples from Georgia with the integuments reddish luteous, the pubescence yellowish and nearly equally distributed on the elytra, and with the rows of yellow spots nearly regular and very conspicuous. More abundant material may show that *texanus* should be united with the present species.

This is the celebrated hickory girdler. In western Pennsylvania it occurs late in August and during September. Though apparently preferring, it does not confine itself to hickory, but likewise occasionally girdles pear, apple, plum, linden, elm and various other trees.] "Ham."

TARICANUS Thoms.

Taricanus truquii Thoms., 1868, Physis i, 5, p. 74.
Length 19 mm. = .76 inch. *Habitat.*—Texas, Mexico.

Gray pubescent, antennæ black, with joints 4–11 pale at base; elytra adorned with black tubercles and numerous fulvous spots;

beneath gray. Elongate parallel; head black, punctate, pubescent; prothorax with two fulvous transverse fasciæ and black tubercles; elytra elongate, parallel, shining, with flattened black tubercles and numerous fulvous spots, apex rounded.

PROBATIUS Thoms., Ess. 1860, p. 17.

Probatius umbraticus Duval, 1857, Ramond de la Sagra Hist. Cuba. p. 272: Chev., An. Ent. Soc. France, 1862, p. 249; Proc. Ent. Soc. Wash. ii, 39; *jaspideus* † Dejean, Cat. 3d ed. p. 363.

Length 6-10 mm. = .24-.40 inch. *Habitat.*—Florida (Bay Biscayne); Cuba.

[This species, taken in southern Florida by Mr. Schwarz, if not originally native, seems to be successfully naturalized. The following description is translated from that of Chevrolat l. c. With the insect in hand a better description is impracticable.

"Brown, sericeous; head variegated with yellow; thorax spinose each side, transverse, with a double median line yellow, also two others at the sides and one underneath on each side of the same color; elytra punctate at base, obliquely truncate at apex, the outer angle acutely spinose, ornamented with three undulated bands either yellow or white, one at base oblique, one at the middle and a transverse one before apex: also a few dots of the same color; antennæ with joints 3-6 gray at base; legs brownish ferruginous."] "Ham."

Ataxiini.

[This tribe is represented in our fauna by two genera which may be thus separated:

Thorax unarmed.....**Aporataxia.**
Thorax armed.....**Ataxia.**

APORTAXIA n. g.

Eyes emarginate, moderately coarsely granulate, antennæ ciliate beneath, not setose; thorax cylindrical, unarmed.

A. lineata n. sp. Length 11-12 mm. = .44-.48 inch.—Form slender, elongate, parallel, brownish piceous, pubescence rather sparse above, brownish yellow with whitish lineations on the elytra. Head longer than wide, front convex, mouth rather small, last joint of palpi long pointed, a very fine median line from occiput to labrum, antennal tubercles strongly elevated, very finely punctulate, surface concealed by dense grayish yellow pubescence; antennæ a little longer than the body, scape not clavate, two-thirds the length of the third joint, which is slightly shorter than the fourth, joints gradually diminishing in length from the fourth; basal half of all the joints, except the scape, white. Thorax cylindrical, a little wider than long, apex truncate, base bisinuate, median line scarcely visible in front of base, a patch of a few deep coarse punctures on each side of the median line in front of middle; punctuation sparse, irregular, and not very fine, a median stripe, one on each side of it, and the sides with condensed yellowish pubescence; elytra coarsely, sparsely punctate, with irregular punctures,

finer toward apex, apices obliquely rounded, slightly narrowed from the humeri; pubescence cinereous yellow, two stripes on each of denser whitish pubescence forming obscure, irregular vittæ, no erect hairs, surface a little uneven; scutellum triangular, rounded behind, pubescent; underside clothed uniformly with brown-yellow pubescence; front and middle coxæ angulated, open externally, closed behind, moderately separated; thighs feebly clavate, middle tibiæ tuberculate, first joint of hind tarsi not twice as long as the second, fourth nearly as long as the preceding three, ungues divergent.

Described from two examples taken by Mr. C. H. T. Townsend near Brownsville, Texas. The types are now in the National Museum at Washington, their description having been permitted through the courtesy of the Curator, Mr. L. O. Howard.] "Ham."

ATAXIA Hald.

Ataxia crypta Say, 1832 (*Lamia*), New Species, N. A. Insects, New Harmony, Indiana, p. 6; Lec., ed. i, 302; *Ataxia sordida* Hald., Tr. Am. Phil. Soc. x, 56; *Stenidia sordida* Proc. Am. Phil. Soc. iv, 473; *Stenosoma sordidum* Lec., Jour. Acad. Nat. Sci. ser. 2d, ii, 158.

Length 12-15 mm. = .48-.60 inch *Habitat.* – Pennsylvania, Alabama, Louisiana, Texas, New Mexico.

[This species, like the preceding, has the form of a narrow *Elaphidion;* it is piceous-black, densely clothed with short brown pubescence, easily abraded, and hispid with long hairs; the thorax is as wide as long, with a small tubercular spine on each side, and the disc in front of base with a row of eight or nine coarse, black punctures on each side of middle; the antennæ are annulate, longer than the body ♂, shorter ♀, scape as long as third joint; the elytra are parallel, with rows of moderately coarse punctures, a subsutural stria terminating at middle, tip either rounded or subtruncate. Some examples are a little variegated with white. Boring in dry cotton stalks in Texas (Riley); boring in dry twigs of box elder (Negundo) and hackberry (Schwarz).] "Ham."

Tribe XIII. Hippopsini.

Front coxæ angulated 2.
Front coxæ rounded; antennæ short 3.
2. Antennæ very long **Hippopsis.**
3. Eyes divided 4.
Antennæ very pilose, scape not longer than third joint; eyes emarginate, upper lobe narrow **Dorcasta.**
4. Both lobes of eyes present: scape of antennæ moderate **Sicyobius.**
Upper lobe of eyes wanting; scape of antennæ very long... **Spalacopsis.**

The species comprised in this group are extremely slender, the thorax is unarmed in all.

HIPPOPSIS Serv.

H. lemniscata Fab., 1801 (*Saperda*). Syst. El. ii. 330; Casteln, Hist. Nat. ii, 1840, p. 493; Lec., Jour. Am. Phil. Soc. ser. 2d, ii, 145; *lineola* Serv., Encyc. Meth. x, p. 336.

Length 10–13 mm. = .40–.52 inch. *Habitat.*—New York to southern Florida (New Jersey, Pennsylvania, District of Columbia, North Carolina), Georgia westward to Texas and northward to Missouri and Ohio; Brazil.

[This insect is long and slender, with antennæ more than twice as long as the body, ♂ and ♀, and fringed with hairs beneath; color of body pale brown; thorax much longer than wide, two white lines on each side; elytra punctate in rows, each with three white lines. This species breeds abundantly in the vines of *Melothisa pendula* at Lake Worth, Florida, also in the stems of *Coreopsis* and *Bidens* (species not determined); in *Ambrosia* in Missouri (Riley).] "Ham."

DORCASTA Pascoe.

D. cinerea Horn, 1860 (*Aegilopsis*), Proc. Ac. Phil. xii, p. 571, pl. 8, fig. 7.

Length 7–10 mm. = .28–.40 inch. *Habitat.*—Texas (San Diego).

Body slender, antennæ not longer than body, densely pilose. The body is densely clothed with erect pubescence, with three yellow vittæ on the thorax, and two on each elytron, and from the distant punctures proceed erect black setæ. The color is piceous, pubescence dark brown, except the elytral and thoracic vittæ. The antennæ are, especially on outer joints, annulate with white.

SICYOBIUS Horn.

S. brousii Horn, 1880. Trans. Am. Ent. Soc. viii, p. 137, pl. ii, fig. 9.

Length 6.5–10 mm.; .26–.40 inch. *Habitat.*—Western Kansas.

Resembles, in form, *Ataxia crypta* without the thoracic spines. Beneath clothed with cinereous pubescence, denuded, forming small black spots; above clothed with pale ochreous pubescence, denser at side of thorax and on the elytra with small spots of white, two of which form slight oblique bands; antennæ but little longer than half the body, pubescent but not ciliate. Taken on the wild gourd (*Cucumis perennis*) by Dr. H. A. Brous, after whom it is named.

SPALACOPSIS.

[The tribe Hippopsini has the front very long and inflexed. In *Spalacopsis* this is seen in the extreme, the small mouth approximating the prothorax in front of the coxæ, the vertex is anterior, and the antennæ, which are approximate at base, project forward in life. The species in our fauna may thus be separated:

Elytra sulcato-striate.....**linum.**
Elytra with narrowly separated rows of close set punctures.
Elytra without denuded spots.....**suffusa.**
Elytra with denuded spots.....**suturalis.**
Elytra with close, almost confused punctuation.....**texana.**

S. linum Duval, 1857 (*Euthuorus*), Ramond de la Sagra, Hist. de Cuba, p. 276, pl. x, fig. 13; Chev., An. France, ser. 4, Tome ii, 256; *stolata* ‡ N. A. collections; *stolata* ‡ Casey, An. N. Y. Acad. Sci. vi, 51.

Length 5–15 mm. = .20–.60 inch. *Habitat.*—Southern Florida, Bahama Islands, Cuba.

Filiform, parallel, head, thorax and elytra equal in width, piceous brown. Head from vertex equal in length to the thorax, closely punctate, grayish brown, with three obsolete gray lines; the antennæ in both sexes nearly of one length, a little longer than the body, hispid with long flying hairs, scape cylindrical and as long as the head from vertex and thorax united; third joint shorter, one-third longer than fourth; joints 5–9 subequal. Thorax cylindrical, much longer than wide, closely punctate, brownish gray, with an inconspicuous median pale stripe and one on each side; elytra brown, variegated with maculations, especially near the suture, apices flattened obliquely and produced on the external side, conjointly producing a deep apical emargination, longitudinally furrowed, the sulcations frequently not very evident, and the elevation of the interstices often feeble, the sulci closely and strongly punctate; underside rather closely, not coarsely punctate, densely grayish pubescent.

This species appears in American collections as *stolata* Newm. The correct identification of *linum* is due to Mr. E. A. Schwarz; more recently I have compared American with Cuban examples. It varies greatly in size and considerably in the sculpture of the elytra. I took it abundantly at Lake Worth, Florida, where it breeds in *Melothria pendula.*] "Ham."

[**S. suffusa** Newm., 1840, Ent. p. 305.

Length 5.5–6 mm. = .22–.24 inch. *Habitat.*—Florida.

Filiform, elytra a little inflated behind middle, piceous brown. Head behind the antennæ and the thorax subequal in length, brown, obscurely trilineate with white; antennæ shorter than the body, ciliate on the underside from the second joint with long flying hairs, scape cylindrical attaining the hind margin of the thorax, third joint one-third shorter, fourth joint two-thirds the length of third, outer joints gradually shorter; thorax much longer than wide, brown, obscurely trilineate with white; scutellum small, wider than long, white; elytra brown, with exceedingly short, narrow, obscure whitish lines; punctures round, small, placed very closely in rows separated by very narrow intervals, a little widened from base to apical third and then roundly narrowed to apex, which is emarginate; apices a little flattened and prolonged.] "Ham."

[**L. suturalis** n. sp.

Length .5 mm. = .20 inch. *Habitat.*—Southern Florida, Punta Gorda.

Very slender, piceous, pubescence cinereous, elytra variegated. Head behind the antennæ mostly shorter than the thorax, piceous, pubescence sparse, not

lineate; antennæ more slender and shorter, joints proportioned as in *suffusa*, flying hairs very sparse; thorax shorter in proportion to the width than in the other species, piceous, pubescence sparse, not lineate; scutellum minute, triangular, white; elytra dilated and punctured as in *suffusa*, suture obscure white, the adjacent two rows of punctures on each side brown from denudation, third row with short white lines, many scattering spots brown from denudation, apices conjointly emarginate.

Described from four examples taken at Punta Gorda on the Gulf coast of southern Florida by Messrs. Schwarz and Hubbard. Three of the types are now in Mr. Schwarz's collection and one in my own.] "Ham."

[**S. texana** Casey, 1891, An. N. Y. Acad. Sci. vi, 51.
Length 10 mm. = .40 inch. *Habitat.*—Texas.

Mr. Casey describes this species as having the elytra inflated to two-thirds wider behind the middle and then narrowed to apex, which is deeply emarginate, the punctuation close and almost confused, maculate with large, irregular denuded spots; and as having dense, recumbent, luteo-cinereous pubescence, the antennæ shorter than the body, and the thorax two-fifths longer than wide.] "Ham."

[**S. stolata** Newm., 1840, Ent. p. 305.
Length .35 inch. *Habitat.*—Florida.

There is at present no Florida species known which corresponds in all respects with Newman's very inadequate description which requires an insect .35 inch. long with sparsely ciliate antennæ shorter than the body, dilated elytra with a much interrupted vitta. By some it has been considered the female of *suffusa*. Its identity with *linum* has likewise been suggested, but that species has hispid antennæ as long as the body and parallel elytra; and besides, Newman's species were taken near Jacksonville, while the northern limit of *linum* seems to be near Crescent City (Schwarz), seventy miles southward. Its status can only be determined by a careful comparison of American forms with Newman's types in the British Museum.] "Ham."

SAPERDA Fab.

[The following table has been constructed so as to avoid the use of sexual characters:

Elytra separately acuminate at tip; color yellowish brown, with four oblique darker bands.....1. **obliqua.**

Elytra rounded at tip with an acute sutural spine; pubescence cinereous variegated with fulvous, shot with numerous black denuded points, thorax vittate.....2. **calcarata.**

Color nearly uniform, brownish yellow; var. *adspersa* Lec.

Elytra obliquely narrowed and prolonged at tip, slightly dehiscent, coarsely punctate; pubescence thin, cinereous, variegated with fulvous patches; thorax trilineate with fulvous.....3. **mutica.**

Elytra rounded at tip.

Elytra vittate, or with lateral stripes.

Pubescence silvery white; thorax and elytra with three broad, pubescent, brown vittæ.....4. **candida.**

Pubescence cinereous; head and thorax with bright yellow pubescence, six black denuded spots on thorax; elytra with broad marginal and sutural stripe bright yellow.....11. **puncticollis.**

Elytra with broad submarginal stripe and suture narrowly, yellowish scarlet; a broad stripe on each side of thorax; surface piceous, with coarse punctures.....10. **lateralis.**

Elytra with broad submarginal stripe extending on thorax to apex yellowish scarlet, connected with which are three oblique bands which may reach the suture or be mere dents; surface piceous, less coarsely punctate. 9. **tridentata.**

Elytra with white pubescent spots; surface brown.

Thorax with two white stripes, elytra each with two large white spots attaining neither margin nor suture; sides of under surface white. 5. **cretata.**

Thorax with two white stripes; elytra each with a humeral and two subsutural white spots, sometimes obsolescent in the ♂; under surface altogether or with the sides white.....6. **fayi.**

Elytra each with three small denuded spots (sometimes wanting); pubescence dense, uniformly olivaceous or yellowish brown.....7. **vestita.**

Elytra with a transverse undulate fascia; surface color ferruginous to piceous. Larger.....8. **discoidea** ♀.

Elytra unicolorous, not variegated.

Thorax with a broad denuded stripe each side of the median line; elytra coarsely not closely punctate; piceous to ferruginous; underside densely clothed with grayish white pubescence. Smaller....8. **discoidea** ♂.

Thorax with a denser line of gray pubescence each side; black, coarsely punctured, thinly clothed with fine cinereous pubescence; varies; pubescence fulvous, punctures rather coarser (California, Oregon). 12. **mœsta.**

Thorax with pubescence uniform; black, densely clothed throughout with cinereous pubescence, less coarsely punctured.....13. **concolor.**

The outer claw of the front and middle tarsi of the male may be either simple, or with a large basal tooth or obtuse process.

This process is long in *obliqua, calcarata, candida* and *cretata;* moderate in *mutica* and *vestita;* small in *fayi;* that of front feet small, of middle large, in *discoidea* and *tridentata;* short and broad in *lateralis,* and simple in *puncticollis, mœsta* and *concolor.*

The larvæ of all the species of *Saperda* mine under the bark and in the wood of living trees, being often very destructive to fruit and such as are planted for shade. The female is possessed of very

powerful mandibles which she uses to slit the bark of the tree for oviposition. The imagoes are short lived, and are not known to eat or do damage, except as stated; the defoliation of lindens, with which *vestita* is sometimes charged, is due to the larvæ of a lepidopteron.] "Ham."

S. obliqua Say, 1826, Jour. Acad. Nat. Sci. v, 274; Lec., ed. ii, 330; Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 162.

Length 16-19 mm. = .64-.76 inch. *Habitat.*—Wisconsin, Michigan, Canada, Massachusetts, New York, New Jersey, Pennsylvania, Missouri.

[Entirely yellowish brown ornamented with darker brown, which, on the thorax, consists of four stripes, and on the elytra of four oblique, parallel, raised bands; the tips of the elytra are divaricate and acuminate. This species has been taken by myself and others on black alder (*Alnus serrulata*), though its breeding habits are not yet known. Occurs during a few days about the middle of June.] "Ham."

S. calcarata Say, 1823, Jour. Ac. Nat. Sci. iii, 408; Lec., ed. ii. 190; Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 162; Harris, Ins. Mass. p. 88; *adspersa* Lec., Agass. Lake Superior. p. 234; Lec., l. c. 162.

Length 25-31 mm. = 1.00-1.25 inch. *Habitat.*—Canada, Wisconsin, Lake Superior, Michigan, Ohio, Pennsylvania, New York, Massachusetts, New Jersey, Missouri, Kansas, Nebraska, Iowa, Vancouver Island, B. C.

[This, the largest of the *Saperdas*, is clothed with gray pubescence diversified with yellow on the head, three stripes on the vertex and some blotches on the elytra, the surface of which is shot with numerous round, black, denuded points, and the suture at tip spinose. This species breeds in the various species of poplar (*Populus*), preferring the older trees. In American linden (*Tilia*) Hubbard. *Adspersa* is a form with uniform yellowish pubescence.] "Ham."

S. mutica Say, 1823. Jour. Ac. Nat. Sci. iii, 409; Lec., ed. ii, 191; Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 162.

Length 9-15 mm. = .36 .60 inch. *Habitat.*—Canada, New York, New Jersey, Missouri, Kansas, Nebraska.

[This species is smaller than the preceding with the same markings, except that the yellow is more predominant, the form more convex, the antennæ conspicuously annulated with white, the tips of the elytra dehiscent and mutic.] "Ham."

S. candida Fab., 1787, Ent. Syst. ii, p. 307; El. Syst. ii, 319; *bivittata* Say, Jour. Acad. Nat. Sci. iii, 409; Lec., ed. ii, 190; Fitch, Rep. 1st and 2d, p. 11! Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 163.

Length 15-20 mm. = .60-.80 inch. *Habitat.*—Canada, Maine, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Missouri, Iowa.

[Clothed with dense white pubescence, antennæ and legs with gray; three broad brown stripes extending from the anterior margin of the thorax to the tip of the elytra, one sutural, the others marginal; a bar sometimes unites the marginal and sutural stripes behind the base. This species, when in the larval state, is very destructive to apple and some other fruit trees; also to crab apple (*Pyrus coronaria*), mountain ash (*Pyrus americana*), Juneberry (*Amelanchier*) and hawthorn (*Cratægus.*] "Ham."

S. cretata Newm., 1838, Ent. Mag. v. 395.

Length 12–20 mm. = .48–.80 inch. *Habitat.*—Massachusetts, Canada, Michigan, Wisconsin, Iowa, Illinois, Pennsylvania.

[Clothed with brown pubescence; two broad vittæ on the thorax and a narrow discal line, white; a broad elongate stripe of the same color emarginate before and behind one-third behind the base of each elytron extending beyond middle and close to suture, also a smaller spot before apex; the sides of the abdomen and meso- and metasternal side pieces are also white. This species breeds in the limbs of *Cratægus* like the following.] "Ham."

S. fayi Bland, 1863, Proc. Ent. Soc. Phil. ii, 320; Can. Ent. xx, 6.

Length 10–12 mm. = .40–.48 inch. *Habitat.*—Canada, New York, New Jersey, Pennsylvania, Ohio.

[This species resembles *cretata*, is of the same color, but smaller; the side vittæ of the thorax extend on the elytra at base, but the discal line is wanting; the anterior elytral spot is reduced to a cylindrical line and separated from that of the opposite side by the suture. The ♂ is much smaller, with the white spots much reduced or wanting, and with the whole of the underside frequently gray. This and *cretata* breed in the limbs of *Cretægus*, and are to be found about the second week of June.] "Ham."

S. vestita Say, 1824, Long's 2d Exp. p. 290; Lec., ed. i, 193; *atkinsoni* Curtis, Brit. Ent. p. 275; Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 163.

Length 12–19 mm. = .48–.76 inch. *Habitat.*—Canada, Vermont, New Hampshire, Massachusetts, New York, Pennsylvania, Michigan, Wisconsin, Iowa, Illinois, Ohio, New Jersey.

[A fine insect, densely clothed with light olivaceous pubescence; elytra each with three small round denuded spots, two of which are placed obliquely before and one more distant behind the middle; these spots are not always present. This insect breeds in the linden (*Tilia*), the larvæ sometimes proving very destructive to them when set out as shade trees. The beetle itself does not injure the foliage, as is sometimes stated in agricultural entomology.] "Ham."

S. discoidea Fab., 1798, Ent. Syst. Suppl. 147 ♀ ; *fuscipes* Say ♂, 1827, Jour Ac. Nat. Sci. v, 273; Lec., ed. ii, 331 ; Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 163 ; *Stenostola fuscipes* var. *dorsalis* Hald., Tr. Am. Phil. Soc. x, 56.

Length ♂ 10 mm. = .40 inch. ; ♀ 15 mm. = .60 inch. *Habitat.*—Canada, New York, Pennsylvania, New Jersey, Louisiana, Kansas, Nebraska, Illinois. Michigan.

[The sexes are so unlike in size and appearance as to have long been mistaken for species. The color of the integument in either sex may be entirely ferruginous, or entirely piceous above; the legs pale to ferruginous, with the tibiæ and tarsi frequently dark; the punctuation of the thorax and elytra is coarse and deep. Male: pubescence above inconspicuous, grayish when the integument is piceous, yellowish when ferruginous, that of the underside is denser, long and silvery; thorax with a denuded line each side of a more dense pubescent median stripe; antennæ not annulate, brown or ferruginous. Female: the pubescence is grayish yellow, according to the surface color; head, thorax, scutellum, sides and apical region of the elytra and a broad irregular fascia at middle of more condensed pubescence sometimes trilineate on the thorax; underside piceous to rufous, pubescence dense. This species breeds abundantly in hickory (*carya*) and butternut (*Juglans cinerea*) and may be taken during June and July.] "Ham."

S. tridentata Oliv., 1795, Ent. iv, 68, p. 30, pl. 4, fig. 48; Lec., Jour. Ac. Nat. Sci. ser. 2d ii, 164; *compsidea* var. *dubiosa* Hald., Proc. Am. Phil. Soc. x, 55; Fitch, Rep. v. (An. Rep. N. Y. State Agric. Soc. 1858, p. 839); separat. p. 59.

Length 9–13 mm. = .36–.52 inch. *Habitat.*—Canada, Vermont, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Michigan, Wisconsin, Illinois, Iowa.

[Piceous, densely clothed with very fine inconspicuous gray pubescence above, longer beneath; the stripes on the elytra are submarginal, from which proceed obliquely backward three bands which may be mere dents or prolonged to the suture meeting those of the opposite side. The thorax has often two black spots on each side and each elytron three. The larvæ frequently destroy the white elm (*Ulmus americana*) when planted as a shade tree, and have been found under the bark of the slippery elm (*U. fulva*) Fitch, and under that of maple (*Acer*) Harrington.] "Ham."

S. lateralis Fab., 1775, Syst. Ent. p. 185: Ent. Syst. 2, 312 ; Syst. El. 2. 223; Oliv., Ent. iv, 68, p. 17, pl. 4, fig. 41; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 164; Fitch, Rep. v (An. Rep. N. Y. State Agric. Soc. 1858, p. 840); separatum p. 60.

Length 9–15 mm. = .36–.60 inch. *Habitat.*—Canada, Vermont, Massachusetts, New York, Pennsylvania, New Jersey, Virginia, West Virginia, Ohio, Michigan, Wisconsin, Illinois, Iowa.

[Piceous, rather coarsely punctured, pubescence gray, very inconspicuous above and mixed with short, semi-erect hairs; the sutural scarlet line mentioned in the table is oftener absent than present. Breeds in hickory, elm, and in witch hazel (*Alnus serrulata*).] "Ham."

S. puncticollis Say, 1824, Jour. Ac. Nat. Sci. iii, 406; Lec., ed. ii, 188; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 164; Randall, Bost. Jour. ii. 43.

Length 9–10 mm. = .37–.40 inch. *Habitat.*—Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Louisiana, Arkansas, Kansas, Nebraska.

[Piceous, pubescence gray and not dense; the head, thorax, margins of the elytra and a broad sutural stripe are clothed with dense, bright yellow pubescence; a round frontal spot, one on the occiput, four placed quadrangularly on the disc of the thorax and one on each side, black from denudation. This species breeds in the poison ivy (*Rhus radicans*), and may be taken during a few days about the middle of June.] "Ham."

S. mœsta Lec., 1850, Agass. Lake Superior, p. 234; Can. Ent. vi, 61.

Length 8–9 mm. = .32–.36 inch. *Habitat.*—Lake Superior, Canada, Michigan, New York, Pennsylvania, Ohio, Oregon, California.

[Readily known by the characters in the table; there is on the thorax two gray stripes of denser pubescence and the antennæ are annulate; the pubescence of the Pacific coast form is fulvous. Breeds in the small branches of various poplars (*Populus*).] "Ham."

S. concolor Lec., 1852, Jour. Ac. Nat. Sci. ser. 2, ii, 163; Can. Ent. xx, 7; *Mecas inornata* ‡ Walsh, Proc. Ent. Soc. Phil. vi, 264; *inornata* ‡ Packard, Forest Insects, p. 427, text but not fig.

Length 11–12 mm. = .44–.48 inch. *Habitat.*—Canada, Massachusetts, New York, New Jersey, Pennsylvania, Michigan, New Mexico.

[Black, resembling *mœsta*, but the pubescence and punctuation are much finer and denser; as in it the antennæ are annulate. Breeds abundantly in the canes of willow (*Salix longifolia*), and also in the base of young poplars (*Populus*).] "Ham."

Tribe XV. Phytoeciini.

Episterna of metathorax wide.
- Epipleuræ indistinct; ungues feebly toothed or cleft **Mecas.**
- Epipleuræ distinct; ungues broadly appendiculate **Oberea.**

Episterna of metathorax moderate.
- Eyes broadly divided; prothorax dilated on the sides.
 - Ungues broadly appendiculate **Tetrops.**
 - Ungues cleft **Tetraopes.**
- Eyes not divided; ungues cleft.
 - Antennæ pilose, outer joints suddenly shorter **Amphionycha.**

MECAS LeConte.

[The species of this genus resemble the smaller *Saperdas*, but their breeding habits are different, being in the stems of plants and weeds so far as known]. They may be separated by the following table, which is based on that of Dr. Geo. H. Horn, Tr. Am. Ent. Soc. vii; Blanchard, in Ent. Amer. iii, 86 and Gahan, Tr. Am. Ent. Soc. xv, 300:

Body above concolorous.
Legs black; thorax usually with two feeble callosities; body above uniformly clothed with cinereous pubescence.
Claws moderately deeply cleft, the inner division acute.....**cana.**
Claws more deeply cleft, the inner division broad and lobe like.**inornata.**
Legs black; thorax without callosities; body above sparsely clothed with cinereous pubescence, thorax at sides and middle, elytra at suture and sides more densely clothed with yellowish white pubescence.**marginella.**
Legs, or at least the femora, red.
Thorax with four or five callosities; surface sparsely cinereo-pubescent, suture and margin more densely.....**pergrata.**
Thorax without callosities, surface very sparsely pubescent; femora red, tibiæ usually dark.....**femoralis.**
Body above bicolored; head and thorax reddish yellow.
Elytra very sparsely cinereo-pubescent, suture more distinctly...**ruficollis.**

M. cana Newm., 1840 (*Saperda*), Ent. p. 12; *Stenostola saturnina* Lec., Coleop. of Kansas, 1859, p. 21 (Smith. Cont. xi); Tr. Am. Ent. Soc. xv, 300.
Length 8-12 mm. = .32-.48 inch. *Habitat.*—Kansas, Texas, Florida.

M. inornata Say, 1824 (*Saperda*), Jour. Ac. Nat. Sci. iii, 407; Lec., ed. ii, 189; *Saperda cinerea* Newm., 1840, Ent. p. 13; *senescens* Bates, Biol. Cent. Amer.; Am. Ent. iii, 86; Horn, Tr. Am. Ent. Soc. xv, 301.
Length 8-15 mm. = .32-.60 inch. *Habitat.*—Nevada, Dakota, Colorado, Nebraska, Wisconsin, Iowa, Missouri, Kansas, Texas, Louisiana, Mexico.

[*M. inornata* ‡ Walsh, Proc. Ent. Soc. vi, 264, is *Saperda concolor*. The characters given in the table are the only ones by which this and the preceding species can be separated, otherwise they seem to be identical.

Black, uniformly clothed above with dense gray pubescence (sometimes yellowish); the thorax may have on each side of the disc a round denuded callus, or this may be wanting; the length is sometimes greater than the width, more often the reverse. *Cana* was described from Florida, and seems to have been differently colored from the Western form, the pubescence grayish white, the elytral and sutural margins also hoary. These two species greatly resemble *Saperda concolor*, but the antennæ are not usually annulate. *Inornata* breeds in the stems of the false sunflower (*Helenium tenuifolium*) Schwarz, and in *Helianthus tuberosus* growing wild.] "Ham."

M. marginella Lec., 1873, New Species (S. M. C. No. 264), p. 239.
Length 7-8 mm. = .28-.32 inch. *Habitat.*—Illinois, Texas, Kansas.
[Easily known by the characters in the table.] "Ham."

M. pergrata Say, 1823 (*Saperda*), Jour. Ac. Nat. Sci. iii, 408; Lec., ed. ii, 190; *Stenostola pergrata* Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 154; *Stenostola gentilis* Lec., l. c. p. 154.
Length 8-10 mm. = .32-.40 inch. *Habitat.*—Dakota, Nebraska, Colorado, Kansas, Missouri, New Mexico, Texas, Louisiana.
[In addition to the characters in the table it need only be added that the antennæ are annulate, that the underside varies from piceous to rufous, and that the sutural and marginal lines of denser pubescence are usually conspicuous.] "Ham."

M. femoralis Hald., 1847 (*Phytœcia*). Tr. Am. Phil. Soc. x, 59; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 155.
Length 7.5 mm. = .30 inch. *Habitat.*—District of Columbia, Georgia, Florida.
[The characters in the table need nothing additional.] "Ham."

M. ruficollis Horn, 1878, Tr. Am. Ent. Soc. vii, 44.
Length 12.5 mm. = 50 inch. *Habitat.*—Texas, Mexico.
[The antennæ and elytra are black; the pubescence on the thorax forms denser patches each side of middle and on the sides; the legs vary from black to rufous.] "Ham."

"The sexual characters of *Mecas* are similar to *Oberea*, the last ventral of the male is triangularly concave and the pygidium of the female rather protuberant," Horn.

OBEREA Mulsant.

The species of *Oberea* differ in the form of the thorax, which may have four, two or no callosities; in the form of the female pygidium, which in two species is strongly protuberant, in the others but feebly so; in the form of the elytral tip, which may or may not be bidentate and emarginate; and in color. In the last respect certain species are constant; others present such variability that a considerable number of names have been proposed, which are now considered synonyms, but which still leave many forms unnamed. The synopsis by Dr. Horn (Trans. Am. Ent. Soc. vii, pp. 45–47, reduced the number of so-called species and an increased number of examples shows that a further reduction is necessary. I would therefore, disregarding the color for the present, arrange the species as follows:

Thorax with four callosities; pygidium of ♀ strongly protuberant.**schaumii.**
Thorax with two callosities; pygidium of ♀ feebly protuberant.
 Elytra truncate at tip.....**tripunctata.**
 Elytra rounded at tip.....**ocellata.**
Thorax without callosities; pygidium of ♀ feebly protuberant.
 Elytra not pubescent.....**gracilis.**
 Elytra closely clothed with recumbent pubescence.....**ruficollis.**

O. schaumii Lec., 1852, Jour. Ac. Phil. ser. 2, ii, p. 153; *wapleri* Chev., Rev. Zool. 1852, p. 420; *quadricallosa* Lec., 1874, Trans. Am. Ent. Soc. v, p. 68. Length 11–15 mm.; .45–.60 inch. *Habitat.*—United States and Canada.

The color varies greatly. In the palest form the entire insect is flavo-testaceous, except the feet and basal joints of antennæ. In the darkest form, the abdomen, femora, tibiæ and thorax are pale, while the rest of the body, including the thoracic callosities, are nearly black. In the intermediate forms the black color may be traced through different individuals, in a series of which the palest and the darkest forms are simply the extremes. It seems useless, therefore, to tabulate individuals which mimic races and varieties only in meagre collections. Breeds in the living twigs of cotton wood (*Populus monilifera*), Riley.

O. TRIPUNCTATA Swed.—Under this name are included a great many specimens. They may be readily separated into two varieties:

Body beneath black.....var. **bimaculata.**
Body beneath in great part yellow.....var. **tripunctata.**

That the individuals, which can easily be separated by the color of the body beneath, constitute varieties of one species seems to me certain. The black abdomen in the first is usually accompanied by black legs and entirely black elytra, the yellow abdomen of the second by yellow legs, yellowish antennæ, and more or less striped elytra. Yet every large collection will contain specimens of var. *bimaculata* in which the legs are at least brownish and the elytra decidedly yellow through the middle, whereby the black abdomen alone remains to differentiate the varieties. The color of the legs very rarely becomes quite pale, even in the var. *bimaculata*, and such an individual received the name *flavipes* from Haldeman. Other variations also occur in the maculation of the thorax, etc., and the following table will serve to separate the most striking. Individuals occur frequently which will not answer to any of the names.

Forms of *O. tripunctata* var. *bimaculata.*

Legs nearly or quite black.
Thorax, often the cervix, yellow, without spots.....**affinis** Har.
Thorax with two discal spots and entire basal margin black....**basalis** Lec.
Thorax with two discal spots and an antescutellar spot black.
tripunctata || Fab.
Thorax with two discal spots only, black.....**bimaculata** Ol.
Legs entirely pale.
Thorax with entire disc black.....**flavipes** Hald.

Forms of *O. tripunctata* var. *tripunctata.*

Head yellow; thorax with two discal spots only black.....**myops** Hald.
Head yellow; thorax with two discal and antescutellar spots black.
mandarina Fab.
Head fuscous; thorax as in *mandarina*.....**tripunctata** Swed.

The elytra in *myops* usually have the lateral fuscous stripe only defined; in the last two the sutural stripe also is well marked.

O. tripunctata Swederus, 1787, vet. Ac. nya Handl. p. 197; *mandarina* Fab., Syst. El. ii, p. 321; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 152; *amiabilis* Hald., Tr. Am. Phil. Soc. x, 57; Lec. l. c. 152; *myops* Hald., l. c.; Lec. l. c.; *oculaticollis* Say, 1824, Jour. Ac. Nat. Sci. iii, 406; Lec., ed. ii, 189; *bimaculata* Oliv., 1795, Ent. iv, 68, p. 21, pl. 4, fig. 43; *tripunctata* || Fab., Ent. Syst. i, 2, p. 310; Hald., Tr. Am. Phil. Soc. x, 57; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 153; *affinis* Harris, Ins. Mass. p. 91; *perspicillata* Hald., l. c. p. 57; *basalis* Lec., l. c. 153; *flavipes* Hald., l. c. 57; Lec. l. c. 153; *texana* Horn, Tr. Am. Ent. Soc. vii, 47.

Length 8–17.5 mm. = .32–.70 inch. *Habitat.*—Canada, Michigan, Ohio, Pennsylvania, New York, Massachusetts, New Jersey, District of Columbia, Virginia, North Carolina, Georgia, Florida, Louisiana, Texas, New Mexico, Colorado, Nebraska, Kansas, Missouri, Illinois, Wisconsin, Iowa.

In the *tripunctata* group of TRIPUNCTATA, in addition to the characters in the table, it may be stated that the body beneath is entirely fuscous, or pale yellowish with fuscous spots; the elytra flavotestaceous with sutural and lateral fuscous stripes; the antennæ annulated or not. In *mandarina*, the underside may be entirely fuscous or variegated with yellow; in *myops* the sutural fuscous stripe is wanting, the body beneath is pale with fuscous spots on the sides of the metasternum and second and third ventral segments; *amiabilis* scarcely differs from *mandarina;* the preceding three have the head yellow and the antennæ annulated; another form occurs with the head fuscous and the antennæ not annulated.

In the BIMACULATA group, *oculaticollis* is entirely black clothed with cinereous pubescence, and the elytra obliquely truncate; *bimaculata, tripunctata* || Fab., *affinis, basalis* and two unnamed forms

agree in being entirely black, except the thorax; *basalis* has an antescutellar black spot, and likewise *tripunctata;* two unnamed forms occur, one with the basal margin black, the other with the thorax, often the cervix yellow, with the two callosities yellow instead of black; *flavipes* has yellow legs; *texana* is yellowish testaceous; head, antennæ and elytra black; thorax with two callosities and an antescutellar black spot; elytra truncate and subspinose at tip; abdomen yellow, last segment and sometimes the sides of the second and third fuscous; legs yellow, tips of the tibiæ and tarsi fuscous.

[This species (*tripunctata* || Fab. *perspicillata*) breeds in the canes of the blackberry and raspberry (*Rubus*), sometimes doing great injury; (*mandarina*) in the twigs of cottonwood (*Populus monilifera*), Riley.] "Ham."

[**O. ocellata** Hald., 1847, Tr. Am. Phil. Soc. x, 57; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 152.

Length 14 mm. = .56 inch. *Habitat.*—Michigan, New York, Massachusetts, New Jersey, Georgia, Florida, Louisiana, Texas.

Beneath entirely red; elytra black, epipleuræ black, legs usually pale, tibiæ and tarsi fuscous; the head and thorax are sometimes rufous, sometimes the occiput and disc of the thorax are black with the legs entirely fuscous, and again the head may be entirely black, the thorax rufous, the legs rufous and the tibiæ and tarsi fuscous; the tips of the elytra, while usually rounded, in some examples are slightly truncate, but never emarginate nor spinulose.] "Ham."

[**O. gracilis** Fab., 1801, Syst. Ent. ii, p. 324; Hald., Tr. Am. Phil. Soc. x, 57; Lec., Jour. Acad. Nat. Sci. ser. 2, ii, 152.

Length 10-13 mm. = .40-.50 inch. *Habitat.*—New York, New Jersey, North Carolina, Georgia, Florida.

Pale yellowish testaceous; antennæ fuscous; thorax densely punctured, without callosities; elytra with a fuscous lateral stripe; legs pale, tips of tibiæ and tarsi darker.] "Ham."

[**O. ruficollis** Fab., 1775, Ent. Syst. i, 2, p. 311; Hald. l. c.; Lec. l. c.; *plumbea* Oliv., 1795, Ent. iv, 68, p. 21; *tibialis* Hald., l. c., *femoralis* Lec. (typ. error), l. c. 153.

Length 15-18 mm. = .60-.70 inch. *Habitat.*—Massachusetts to Georgia, Vermont, Massachusetts, New York, New Jersey, Ohio, Pennsylvania, Virginia, Kansas.

Pale rufous; antennæ and elytra nearly black, epipleuræ pale at base; thorax without callosities; tibiæ and tarsi fuscous, the anterior rufous. Only one example of *tibialis* is known to be in any collection.] "Ham."

[As the synoptic table of *Oberea* by Dr. Horn (Tr. Am. Ent. Soc. vii, 45) based on color characters may be useful, it is here presented.

Body beneath and legs, black.
Thorax entirely black **oculaticollis.**
Thorax in great part yellow **bimaculata.**
Body beneath and legs variable, never both at the same time black.
Thorax with four distinct callosities, pygidium of female strongly protuberant. **quadricallosa.**
schaumii.
Thorax with two or no callosities; pygidium ♀ feebly protuberant.
Body above and beneath entirely black.
Form moderately robust, middle and posterior legs black, anterior femora at apex and tibiæ yellow; thorax without callosities **tibialis.**
Form very slender; thorax with two callosities; legs entirely yellow. **flavipes.**
Body beneath and above yellow.
Thorax with callosities.
Thorax unicolored.
Elytra slightly sinuate at tip, epipleuræ black; abdomen entirely rufous. **ocellata.**
Elytra emarginate at tip and subbidentate, epipleuræ pale at base, abdomen tipped with black **texana.**
Elytra yellow, with black stripes **tripunctata** Swed.
Thorax without callosities **ruficollis.**
gracilis.

According to Mr. Leng's table *quadricallosa* enters into synonymy with *schaumii; oculaticollis, bimaculata, flavipes* and *texana* with TRIPUNCTATA Swed.; and *tibialis* with RUFICOLLIS.] "Ham."

TETROPS Kirby.

Three species occur in our fauna, none of which are common.

Elytra with grayish recumbent pubescence and erect pale hairs intermixed; legs black **canescens.**
Elytra with black recumbent and erect hairs.
Legs black, thoracic umbone distinctly elevated **jucunda.**
Legs red, umbone scarcely elevated **monostigma.**

T. canescens Lec., 1852, Jour. Ac. Nat. Sci. ser. 2, ii, 157.
Length 11.5 mm. = .46 inch. *Habitat.*—New Jersey, Kansas, New Mexico.

[Black; head, thorax, prosternum and base of antennal joints rufous; thorax constricted before and behind, sparsely punctured and with a large discal callus, black; elytra coarsely punctured. This species has been taken in New Jersey on *Alnus serrulata.*] "Ham."

T. jucunda Lec., 1862. Proc. Ac. Nat. Sci. Phil. p. 40.
Length 8 9 mm. = .32-.36 inch. *Habitat.*—Middle States, Nebraska.

[Very like *canescens*, but the pubescence and hairs are black and longer; the coloration is the same.] " Ham."

T. monostigma Hald., 1847 (*Oberea*), Trans. Am. Phil. Soc. x, 57; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 156.

Length 7.5 mm. = .30 inch. *Habitat.*—Pennsylvania.

[This species differs from *jucunda* by its smaller size and red legs; the thoracic callus is also smaller. This and *jucunda* are very rare, and have not been seen.] " Ham."

TETRAOPES Serville.

The following synopsis is by Dr. Geo. H. Horn, Tr. Am. Ent. Soc. vii, 48:

Elytra with median and apical cordiform black space.
 Disc of thorax black; thoracic umbone suddenly elevated**discoideus.**
 Disc of thorax red; umbone gradually convex.....**canteriator.**
Elytra black, with a red basal band, and triangular red spot behind middle.
elegans.

Elytra with black spots.
 Antennæ black, not annulate.
 Abdomen very sparsely, scarcely visibly punctulate; mandible of ♂ with deep sinuation at base.....**tetraophthalmus.**
 Antennæ more or less distinctly annulate; abdomen densely but very finely punctulate; mandible of ♂ with moderate sinuation.
 Claws rather deeply bifid; surface rather sparsely clothed with recumbent pubescence and with semi erect hairs visible on the disc.
 Thoracic umbone suddenly elevated, distinctly limited at the sides.
 Surface of umbone opaque; abdomen scarcely punctulate.**collaris.**
 Surface of umbone shining; abdomen densely punctulate.
femoratus.
 Thoracic umbone gradually convex; antennæ feebly annulated.
 Antennæ and legs dark.....**quinquemaculatus.**
 Scape and femora red.....var. **texanus.**
 Claws feebly cleft at tip; surface more densely clothed with recumbent pubescence, erect hairs very short and visible only at sides and tip.
 Thoracic umbone gradually convex, lateral tubercle not very prominent.
canescens.

All the species of *Tetraopes* appear in advanced Summer, and breed in the stems and roots of milkweed (*Asclepias*).

T. discoideus Lec., 1858, Jour. Ac. Nat. Sci. ser. 2, iv, 26; *rubrocinereus* Thoms., 1860, Classif. Longicorn p. 67.

Length 7–8 mm. = .28–.32 inch. *Habitat.*—New Jersey, New Mexico, Texas, Arizona, Idaho.

[Black, clothed with sparse cinereous pubescence mixed with black hairs; antennæ black, not annulate; thorax red at base and apex; with four black spots on the disc; elytra red, with black markings

as in the table; underside and legs black. There is some variation in the coloration; the head may be black (typical) or red; the thorax may be altogether black, except an apical space on each side of middle; the anterior black space on the elytra may be reduced to a spot, and there may be a round black callus on each side at the outer angle of the apical black space.] "Ham."

T. canteriator Drapiez, 1819, Ann. génér. des Sc. phys. ii, 47, pl. 16, fig. 6; Say, Bost. Jour. i, 96; Lec., ed. ii, 666; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 156; *arator* Germ., 1824, Ins. Spec. nov. p. 486; *13-punctatus* Drapiez, l. c.
Length 8–12 mm. = .32–.48 inch. *Habitat.*—Canada, Massachusetts, New York, Pennsylvania, New Jersey, Ohio, Florida, Alabama, Iowa.

[The elytral markings are as in *discoideus*, and liable to variation by extension or diminution; the thorax is usually red with four black spots; the scutellum and elytral umbones are black.] "Ham."

T. elegans Horn, 1894, Baja Calif. Coleop. (Pr. Cal. Acad. Sci. ser. 2, iv, 404).
Length 9–12 mm. = .36–.48 inch. *Habitat.*—Lower California (San Jose del Cabo).

"Black, clothed with fine cinereous pubescence, bluish on the thorax, with short, black, erect hairs intermixed; antennæ with grayish blue pubescence on the underside; head red, sparsely punctate; thorax black, umbone abruptly elevated, coarsely punctate and hairy on its summit; scutellum black; elytra coarsely punctate at base, apical third nearly impunctate, black, a red basal band, broader at middle, extends along the sides, and behind the middle is a triangular red space not reaching the suture, umbone black, a very small black spot on each side of the suture behind the posterior edge of the red band, the hind edge of the triangular spot bordered with black; beneath black. The four thoracic spots seen in the other species are wanting in this."

[This species has not been seen, and the above description is an abbreviation of the original.] "Ham."

T. tetraophthalmus Forst, 1771 (*Cerambyx*), Cent. Ins. p. 41; *Lamia tornator* Fab., Ent. Syst. 2, 287; *Tetraopes tornator* Schon., Syn. Ins. iii, 401; Say, Bost. Jour. i, 96; Lec., ed. ii, 665.
Length 9–14 mm. = .36–.56 inch. *Habitat.*—Canada, Vermont, New Hampshire, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Michigan, Wisconsin, Illinois, Iowa, Nebraska, Kansas, Mexico, Louisiana, South Carolina.

[Black, head, thorax and elytra red; thorax with four discal spots, a blotch at the anterior angles and the basal margin, black; scutellum black; elytra with humeral umbone and three spots on each, black; these spots are usually constant, the first round and subsutural, the second an oblong discal space, the third also discal and roundish.] "Ham."

T. collaris Horn, Tr. Am. Ent. Soc. vii, 49.
Length 12.5 mm. = .50 inch. *Habitat.*—Colorado, New Mexico.

[Black, head, thorax and elytra red; thorax and elytra with the usual black spots; the thoracic umbone is suddenly elevated and its surface opaque; anterior and middle femora brown.] "Ham."

T. femoratus Lec., 1847, Jour. Ac. Nat. Sci. ser. 2, i, 93; l. c. ii, 157; var. *basalis* Lec., 1852, l. c. p. 157; var. *oregonensis* Lec., 1854, Proc. Ac. Nat. Sci. Phil. 1869, p. 81.
Length 12–16 mm. = .48–.64 inch. *Habitat.*—Illinois, Iowa, Nebraska, Kansas, Colorado, Texas, Arizona, California, Oregon, Washington, Montana.

[The foregoing is the distribution of the species; following Dr. Horn the varieties may be separated thus:

Var. FEMORATUS.—*Scape of antennæ black, femora red,* thorax quadrimaculate, elytra with umbone and three black spots on each side.

Var. MANCUS.—*Scape reddish, femora dark,* thorax quadrimaculate, umbone of elytra and one spot at middle on each side black, occurs in California and Nevada.

Var. BASALIS.—*Scape red, femora red,* thorax quadrimaculate, umbone and two spots on the elytra black, generally distributed.

Var. OREGONENSIS.—*Scape, femora, and anterior tibiæ red,* thorax quadrimaculate, umbone and three spots on each elytron black; these spots are very small and one or all are frequently absent. Occurs in Oregon, Washington and Arizona.

The foregoing is the definition of the aggregation of individuals which have received names, but besides there is a mass of others varying in the color of the limbs and in the number and size of the elytral spots in every conceivable way, as remarked by Dr. Horn, the antennæ likewise sometimes losing their usual annulation.] "Ham."

T. quadrimaculatus Hald., 1847, Tr. Am. Phil. Soc. x, 53; Lec., Agass. Lake Superior, p. 234; Jour. Ac. Nat. Sci. ser. 2, ii, 157; var. *texanus* Horn, Tr. Am. Ent. Soc. vii, 49.
Length 10–12 mm. = .40–.48 inch. *Habitat.*—Michigan, Lake Superior, Kansas, Texas, Oregon.

[Thorax quadrimaculate, elytra with umbone, and a posterior spot each side black; an example from Oregon has the scape of the antennæ red. The var. *texanus* is larger and frequently has a black spot on the elytra behind the scutellum close to the suture.] "Ham."

T. canescens Lec., 1852, Jour. Ac. Nat. Sci. ser. 2, ii, 157; *annulatus* Lec., 1847, l. c. ser. i, 93: l. c. ser. 2, ii, 157.

Length 9-14 mm. = .36-.56 inch. *Habitat.*—Kansas, Texas, New Mexico.

[The ground color of this species is very pale red, the thorax is quadrimaculate, the umbone and two spots on the elytra are black, one or both sometimes wanting; the pubescence is longer and denser than in any of the other species. *Annulatus* is the older name, but synonymy was made by the author himself for reasons not stated, but probably on account of the name being preoccupied.] "Ham."

AMPHIONYCHA LeConte.

[The two species of this genus in our fauna may be thus separated:

Sides of elytra rounded.....**flammata.**
Sides of elytra vertical.....**amœna.**

A. flammata Newm., 1840 (*Saperda*), Entom. p. 13; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 154; *marginata* ‡ Fab., Hald., Pr. Am. Phil. Soc. iv, 373; *ardens* Lec., 1849, Coleop. Kansas, p. 22.

Length 6-9.5 mm. = .24-.38 inch. *Habitat.*—New York, New Jersey, Pennsylvania, North Carolina, Florida, Texas, Kansas, Nebraska.

Black, hispid with fine erect black hairs, two oblique lines on the head, a stripe on each side of the thorax and the margins of the elytra nearly to apex yellow. Var. *ardens* is more hispid, more coarsely punctured, with the yellow of the margin extending to the middle of the disc. The antennæ are hispid from base and annulate from the fourth joint.] "Ham."

[**A. amœna** n. sp.—Length 4.5 mm. = .18 inch.

Elongate, shining black, antennæ shorter than the body, with long flying hairs, annulate at the incisures, scape and third joint subequal, fourth much shorter, outer joints gradually shorter. Head wider than long, short, a little retracted, front convex, with an exceedingly fine median line, not impressed between the antennæ, surface white, and with the thorax clothed densely with extremely fine short white pubescence. Thorax a little wider than long, cylindrical, a fuscous spot near margin behind each eye, at base each side of middle two large denuded triangular spots black. Elytra parallel till near apex, then suddenly obtusely rounded, disc flat, limited each side by a sharp ridge (humeral carina) parallel with the suture, sides deep, vertical, divided into two broad striæ by a subhumeral carina, internal (upper) with two rows of close-set round punctures, punctuation of the outer (lower) which is the wider confused, marginal stria very narrow, impunctate, obliterated in front; disc moderately finely punctured in rows, which are confused near the suture, each puncture bearing a very fine semi-erect black hair; underside with sparse exceedingly fine short pubescence, alutaceous, shining; first joint of hind tarsi scarcely longer than the second.

This is a pretty little species with white head and thorax spotted with black, and shining black elytra. The vertical and striate sides

of the elytra are characters not known to me to exist in any other species of the Cerambycidæ, and to some may suggest a new genus which may be named *Cathetopteron;* should the suggestion materialize, the foregoing characters will be sufficiently descriptive. The unique type was taken near Brownsville, Texas, by Mr. C. H. T. Townsend, and through the courtesy of Mr. L. O. Howard, Honorary Curator of the National Museum at Washington, its description has been permitted.] "Ham."

Tribe XVI. Methiini.

Antennæ with second joint distinct.
 First joint of antennæ with a small apical spine, front larger and more vertical, eyes more separated.....**Idœmea.**
 First joint of antennæ with a stout spine, front short, eyes approximate. **Styloxus.**
Antennæ with second joint obsolete (therefore apparently 10-jointed).
 Eyes emarginate.....**Methia.**
 Eyes divided.....**Dysphaga.**

IDŒMEA Horn.

I. fulleri Horn, 1880, Trans. Am. Ent. Soc. viii, p. 138, pl. ii, fig. 10.
Length 16.5 = .66 inch. *Habitat.*—Texas.

"Brownish testaceous, elongate, subcylindrical, sparsely clothed with pale brownish pubescence. Thorax cylindrical, slightly dilated at middle, one-fourth longer than wide, a slight oblique impression on each side near the base, vague traces of three smooth discal lines, surface coarsely punctured. Elytra wider than the thorax, coarsely punctured, gradually narrowed to apex, apices separately rounded. Body beneath and legs piceous, femora paler at base" (original description).

STYLOXUS LeConte.

S. lucanus Lec., 1873, new species of Cerambycidæ (S. M. C. No. 264), p. 240.
Length 8.5 mm. = .34 inch. *Habitat.*—Cape San Lucas, Lower California.

["Brown, with grayish hairs, prothorax rugosely punctured, a small callus behind the middle; elytra pubescent, punctured, not covering the abdomen, rounded at apex" (LeConte's description. Tr.).

In this genus the eyes are very large and nearly contiguous on the vertex; the scape of the antennæ is spinose on the inner side; the thorax cylindrical and one-half longer than wide; the elytra three-fourths as long as the abdomen.] "Ham."

METHIA Newman.

M. pusilla Newm., 1841, Ent. p. 18; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 144.
Length 5-9 mm. = .20-.36 inches. *Habitat.*—Florida.

[Piceo-fuscous; antennæ, legs and a broad space on the middle of the elytra, palish; eyes large, coarse, closely approximate on the

vertex; antennæ hispid, 10-jointed, joints 2–9 subequal; thorax longer than wide, deeply constricted at apex and base; disc uneven, not tuberculate; elytra three-fourths as long as abdomen, an elevation at base on each side of scutellum, closely and finely punctured, two very fine lines from humeral and scutellar umbone uniting before apex; the color is variable by expansion or contraction of the pale or brown.] "Ham."

[**M. punctata** Lec., 1873, new species of Cerambycidæ (S. M. C. No. 264), p. 240; *Methia pusilla* ‡ Chev., 1862, Coleop. Cuba (Ann. Ent. Soc. France), p. 256.

Length 7–10 mm. = .28–.40 inch. *Habitat.*—San Domingo, Cuba.

As this species bears a great resemblance to *pusilla*, and its occurrence in southern Florida probable, the principal differential characters are reproduced so that it may be recognized when found. The sides of the thorax are scarcely dilated; there is no apical, and the basal constriction is less deep; the elytra are comparatively shorter, and the coloration is inconstant.] "Ham."

DYSPHAGA LeConte.

[Synopsis by Dr. Geo. H. Horn, Coleop. Baja Calif. (Proc. Cal. Acad. Sci. v, 247. All the species are rare.

Head and thorax piceous black.
Thorax distinctly punctate, elytra not costulate.....**tenuipes.**
Thorax smoother, bicallous at base.....**lævis.**
Head and thorax reddish yellow, elytra piceous and distinctly bicostulate.
bicolor.
Pale yellowish testaceous, elytra bicostulate.....**debilis.**]

D. tenuipes Hald., 1846 (*Molorchus*), Pr. Ac. Nat. Sci. iii, 126; Proc. Am. Phil. Soc. iv, 374; Lec., Jour. Ac. Nat. Sci. ser. 2, ii, 143; *Tessaropa ventralis* Hald. ♀, Proc. Am. Phil. Soc. iv, 374.

Length 6–6.5 mm. = .24–.26 inch. *Habitat.*—New York, New Jersey, Pennsylvania.

[Black, clothed thinly with cinereous pubescence, thorax cylindrical and elongate, with ocellate punctures; elytra scabrous about half the length of the abdomen, pale at base, underside brownish ♂, yellowish ♀. Breeds in dead hickory twigs. The rarity of the *Dysphaga* may be apparent only, as their great resemblance to the common *Molorchus* may deceive collectors.] "Ham."

D. lævis Lec., 1873, New Species (S. M. C. No. 264), p. 240.

Length 7 mm. = .28 inch. *Habitat.*—Illinois.

[Differs from *tenuipes* by the characters in the table, and by the rather longer elytra narrowed and dehiscent behind the middle, and by being piceous.] "Ham."

D. bicolor Horn, 1885, Tr. Am. Ent. Soc. xii, 196.
Length 7.5 mm. = .30 inch. *Habitat.*—Texas.

The characters in the table will distinguish this species when found.

D. debilis Horn, 1895, Coleop. Baja Calif. (Proc. Cal. Acad. Sci. 2d ser. v, 246.
Length 4.5 mm. = .18 inch. *Habitat.*—Lower California (San Jose del Cabo).

This species can likewise be known by the table.

[*Polyopsia analis* Hald., 1845, Tr. Am. Phil. Soc. x, 57, was placed in *Adetus* Lec., Jour. Ac. Nat. Sci. ser. 2d, ii, 161, of which *Agennopsis* Thoms. is a synonym. It has been discovered that the type was from Brazil and not from Pennsylvania, Lec. Proc. Acad. Nat. Sci. 1873, p. 336.] "Ham."

(*Here Mr. Leng's work ends.*)

While the Synopsis of the Cerambycidæ has been going through the press some changes in synonymy have been made, some unknown species introduced and others described. To complete the work these must be briefly noticed.

Ergates neomexicanus Casey, 1890, An. N. Y. Acad. Sci. v, 490.

This is synonymous with SPICULATUS, being a description of a well-established individual variation.

Mallodon molarium Bates, 1879, Biolog. Am. Cent., Coleop. vol. v, 9, pl. 1, figs. 10 and 11. *Habitat.*—Lower California, Mexico, Panama, Nicaragua.

[Resembles our other species, but has the upper edge of the mandibles elevated in a tubercle.] "Horn."

Prionus debilis Casey, 1891, An. N. Y. Acad. Sci. vi, 21. This is a synonym of IMBRICORNIS, being a description of a small and well-known race of that species.

Tragosoma harrisii is T. DEPSARIUM Linn. as shown by ample comparisons (see Can. Ent. xxiv, 296). Recently Mr. Klages compared examples taken in the higher mountains of Colorado with his European and finds them identical, but varying much from the Pennsylvania form.

Tragosoma spiculum Casey, 1890, An. N. Y. Acad. Sci. v, 492.

This is described from an extreme individual variation of DEPSARIUM with which it must be united.

Tragosoma pilosicornis Casey, 1890, l. c. p. 492.
Length 24.6 mm. = .98 inch. *Habitat.*—? California.

Separated, according to Mr. Casey, from *depsarium* by its rather

densely pubescent antennæ, feeble elytral sculpture, form of the sutural spines, and smooth, polished and impunctate hypomera.

TETROPIUM.—Three species have recently been added to the previous two by Capt. Thomas L. Casey, and a synoptic table of all the species presented, which is here reproduced from Ann. N. Y. Acad. Sci. vi, 22.

Elytra wider than the prothorax; third antennal joint in the male much longer than the second.

Third antennal joint (female) pyriform, unusually short, scarcely twice as long as wide; pronotum very sparsely punctate, except laterally; elytra generally pale.....**cinnamopterum.**

Third antennal joint (female) much more elongate, always distinctly more than twice as long as wide; pronotum very densely punctate.

Pronotum with a narrow and abruptly limited median impunctate area toward base, which is subcarinate; elytra generally pale.**parallelum.**

Pronotum without a median impunctate area, except narrowly and vaguely toward base; elytra usually concolorous.

Sides of the prothorax broadly rounded; pygidium evenly parabolic.
schwarzianum.

Sides of the prothorax vaguely subangulate in the middle, the punctuation very fine, extremely dense; pygidium triangular with the apex narrowly subtruncate.....**velutinum.**

Elytra not wider than the prothorax; second antennal joint of the male but slightly shorter than the third, the latter equal in length to the fourth.
parvulum.

T. parallelum Casey, 1891, l. c. 23.
Length 12–14 mm. = .48–.56 inch. *Habitat.*—Colorado, New Mexico.
Black, elytra uniform red-brown, pubescence short, very dense.

T. schwarzianum Casey, 1891, l. c. p. 24.
Length 14 mm. = .56 inch.; width .18 inch. *Habitat.*—Michigan (Marquette).
Piceous black, pubescence short and dense; resembles *velutinum.*

T. parvulum Casey, 1891, l. c. p. 24.
Length 8 mm. = .32 inch.; width .88 inch. *Habitat.*—Indiana.
Resembles *cinnamopterum*, but has shorter legs, and the antennæ are not appendiculate.

More detailed descriptions than here given would cause confusion; none of Mr. Casey's types have been seen; the species as they now stand seem uncomfortably close, and there are some individuals which, by a strict interpretation, cannot be assigned to any of them.

Hylotrupes litigiosus Casey, 1891, l. c. p. 25, is a description of a long-known variety of LIGNEUS occurring on the Pacific coast.

Phymatodes thoracicus Muls. is a synonym of LIVIDUS Rossi.

Phymatodes obliquus Casey, 1891, An. N. Y. Acad. Sci. vi, 26.
Length 7.2–7.6 mm. = .288–.304 inch. *Habitat.*—California (Santa Clara Co.).

According to Mr. Casey this species is allied to *varius*, from which it differs chiefly by the longer antennæ, finer, sparser punctuation of the pronotum, denser punctures of the elytra, and much more oblique posterior fascia.

Phymatodes juglandis Leng, 1890, Ent. Amer. vi, 214.
Length 4.5–6.5 mm. = .18–.26 inch. *Habitat.*—California (Los Angeles).

Differs from *decussatus* by the more coarsely punctured elytra and the more oblique and angulate anterior fascia.

Malacopterus vittatus Lec. = LINEATUS Guer.

HYPEXILIS PALLIDA Horn and GRACILIA OBLIQUATA Horn (see Ent. Amer. vi, 213).

CHROTOMA Casey.

This genus is founded on a single female example, and according to Mr. Casey only differs from *Brothylus* and *Osmidius* by the peculiar elongate subparallel form of the last joint of both palpi, but there is not sufficient data given to define its exact position in the table of the *Cerambycini*.

C. dunniana Casey, 1891, Proc. N. Y. Acad. Sci. vi, 27.
Length 16.5 mm. = .66 inch.; width .17 inch. *Habitat.*—Texas (El Paso).

Parallel, convex, piceous black throughout; thorax with five denuded callous spots on the disc; scutellum acutely triangular; elytra with a marginal and discal pale rufo-testaceous vitta nearly concealed by the dense vestiture, which is coarse recumbent and grayish white, with numerous small denuded spots and with an acute sutural spine (abstract from Casey's description).

Eburia conspersa Horn, 1894, Coleop. Baja Cal. (Pr. Cal. Ac. Sci. ser. 2, iv, 399).
Length 17 mm. = .67 inch. *Habitat.*—Lower California (San Jose del Cabo).

This species, according to the describer, has more the habitus of an *Elaphidion* than of an *Eburia*. Pale piceo-testaceous, thorax transversely quadrate, with a smooth median line and three facets on each side; elytra rugulose, with foveiform punctures, an ivory spot at base, two behind middle, tip of elytra rounded and with a sutural spine; femora not spinose.

Elaphidion parallelum Newm. = VILLOSUM Fab.

Elaphidion arizoniense Casey, 1891, An. N. Y. Acad. Sci. vi, 28.
Length 21–23 mm. = .84–.90 inch. *Habitat.*—Arizona.

Described from two male examples as of the form of *irroratum*,

castaneous throughout, sparsely marmorate on the thorax and elytra with denser spots of pale yellow; antennæ longer than the body, joints 3–5 strongly spinose, 8–11 carinate; thorax with a median and two basal callosities; elytra truncate, the outer spine obtuse, the inner more acute; femora not spinose, posterior tibiæ carinate. In the table this may be placed next *irroratum*.

Elaphidion levettei Casey, l. c. p. 29.

Length 18 mm. = .72 inch. *Habitat.*—Arizona.

Described from a single mutilated male as of the form and size of *pubescens*, next to which it may be placed in the table. Elongate, slender, parallel, dark rufo-castaneous, shining, pubescence silvery white, uniform on thorax and scutellum, but forming on each elytron four vittæ; antennæ wanting; thorax longer than wide, densely coarsely punctured on the disc, rufous towards the sides; elytra coarsely sparsely punctured at base, gradually finer to apex, truncate, bispinose; femora not spinose.

The following species has the four posterior femora obtusely unispinose at tip and may follow *mucronatum* in the table.

Elaphidion mutatum Gahan, 1890, Ann. and Mag. Nat. Hist. ser. 6, vol. vi, 32.

E. tomentosum ♀ Chev., 1862, Ann. Soc. Ent. France, ser. 4, ii, 260.

Length 16 20.5 mm. = .64 .80 inch. *Habitat.*—Cuba, Florida (Key West).

"Castaneous, covered with dense gray pubescence, disc of thorax with five tubercles, the median cariniform, the posterior two more or less obsolete; elytra densely punctate at base, punctuation behind middle obsolescent, each with the humerus and a sub-denuded dorsal spot near the middle castaneous and bispinose at apex; antennæ with joints 3 and 4 unispinose, 5–10 bispinose." [T. R.]

"Under the name *E. tomentosum*, Chevrolat included two very distinct species; the females which he has described are the females of the present species, the male of which I saw in the possession of Dr. Horn when here on a visit to England. Two female examples from St. Domingo, which are undoubtedly the females of *E. tomentosum*, are in the British Museum, and, except in the much shorter antennæ, present no differences of importance from the male. Like it they have the prosternum truncated and vertical behind. In *E. mutatum* the prosternum is feebly arched and almost flattened behind * * *. The spines at the apices of the joints of the antennæ do not stop with the seventh joint as Chevrolat's description seems to imply, but gradually becoming smaller, are met with up to the tenth

joint. Dr. Horn's male example from Florida differs from the female only in having slightly longer and slenderer antennæ, and in having the apex of the last ventral segment pointed in the middle and sinuated towards the sides, while in the female it is rather abruptly rounded. *E. tomentosum* bears a very strong resemblance to *E. mucronotum* Say, but may be distinguished by the much less close punctuation of the elytra and sides of the prothorax" ("Gahan").

ELAPHIDION CINEREUM Oliv. and E. LANATUM Chev. were not known in our fauna when Mr. Leng published his table of *Elaphidion*, but he has introduced them in a supplementary way (Ent. Amer. vi, 214). The length of *lanatum* is 15.5 mm. = .62 inch., and not as given by Mr. Leng. In both the femora are unarmed.

Rhopalophora meeskei Casey, 1891, An. N. Y. Acad. Sci. vi, 30, is a scarcely defined geographical race of LONGIPES (Can. Ent. xxiv, 159).

Rhopalophora bicincta Horn, 1895, Proc. Cal. Acad. Sci. ser. 2, v, 245.

Length 5 mm. = .20 inch. *Habitat.*—Lower California (San Jose del Cabo).

This is described from the female as black, rather dull, elytra with a basal and postmedian narrow band of silvery white pubescence; antennæ yellow, not longer than the body; thorax as in *R. longipes;* elytra parallel, scarcely wider than the thorax, apices 3 or 4 dentate, surface closely cribrate-punctate; beneath black, with patches of silvery white pubescence; legs piceo-testaceous, tibiæ paler. This species is placed in this genus for the present, but the discovery of the male may suggest a new generic name.

RHINOTROGIDES Lacordaire (Tribe VI, *ss.*).

Distinct from RHOPALOPHORINI by the anterior coxal cavities closed behind; it is represented in our fauna by one species.

Acyphoderes delicatus Horn, 1894, Coleop. Baja Cal. (Proc. Cal. Acad. Sci. ser. 2, iv, 400).

Length 11 mm. = .44 inch. *Habitat.*—Lower California (El Taste).

The characters given are from the author's description.

Slender, head and antennæ yellowish, the latter half the length of the body, stouter externally, scape coarsely punctate, third joint nearly as long as the next three; thorax, length and breadth equal, wider at middle, black beneath and densely punctured, base and apex bordered with black, disc reddish brown, convex, densely punctate, a vague oblique umbone on each side of a feeble, smooth, median line; elytra pale brownish testaceous, yellowish white along base, subulate; abdomen pale piceo-testaceous; legs rufo-testaceous, femora and basal half of tibiæ yellowish.

Ancylocera brevicornis Casey, 1893, An. N. Y. Acad. Sci. vii, 585, is the female of ELYTROLEPTUS DIVISUS Lec.

Tragidion auripenne Casey, An. N. Y. Acad. Sci. vii, 586.

Length 14–20 mm. = .56–.80 inch. *Habitat.*—Arizona, southwestern Utah.

Described by the author as parallel, convex, black, the elytra bright golden-yellow, except at basal margin, pubescence recumbent assuming the color of the surface; antennæ slender, one-half longer than the body; thorax wider than long, acutely tuberculate on the sides behind the middle, disc with five tubercles; elytra each with five strong narrow ridges, the fourth joining the fifth before middle; legs slender, hind tibiæ somewhat dilated.

Mr. Casey regards *fulvipenne* Say as a species, but whatever view may be entertained will not affect the following table by Mr. Casey.

Third joint of the hind tarsus not longer, but seldom visibly wider than the second; elytra corrugated.

Antennæ more or less pale, the swollen apices of the pale joints black and abruptly more densely pubescent.

Antennæ entirely black toward apex; elytra strongly narrowed from base to apex; large species, the black hairs of the pronotum and legs with a strong cobalt-blue reflection **annulatum.**

Antennæ pale throughout, the apices of all the joints black; elytra parallel; size smaller, black; the hairs without blue reflection; hind tibiæ moderately dilated and compressed **auripenne.**

Antennæ black throughout; apices of the joints feebly swollen, but not more densely pubescent.

Third joint of the hind tarsus scarcely shorter than the second; posterior tibiæ not distinctly modified; elytra varying from black with a small fulvous spot behind the humeri to completely fulvous, except at the basal margin **coquus.**

Third joint small, very much shorter than the second; posterior tibiæ broader, strongly compressed, elytra fulvous throughout, except at base. **fulvipenne.**

Third joint of hind tarsus distinctly longer and sometimes wider than the second; elytra not corrugated, parallel, each with three feeble and minutely costuliform lines; pronotal punctures in the male minute and dense, but becoming abruptly coarse in an apical band, the posterior transverse margin of which is multisinuate; in the female minute and dense throughout **armatum.**

Batyle cylindrella Casey, 1893, An. N. Y. Acad. Sci. vii, 587.

Length 9.5 mm. = .38 inch. *Habitat.*—Texas (El Paso).

Described as bright red throughout, except the post-sterna, part of the tarsus, the apical part of the antennæ and tip of hind femora dark; differing from *suturalis* by its more elongate form, shorter and coarser pubescence, which is pale and not black, less punctate head and longer legs.

Oxoplus coccineus Casey, 1893, An. N. Y. Acad. Sci. vii, 588.
Length 19-20 mm. = .75-.80 inch. *Habitat.*—Utah (southwestern).

Described from three males as bright scarlet except the head, antennæ, entire under surface between the front and hind coxæ, apical and basal bead of the thorax, scutellum, basal margin of the elytra and a common sutural dash in apical half, black; this dash in the female becomes very broad, extending to the middle, but not attaining the margin, except near tip.

This may be placed in the table next *corallinus*, examples of which, in my collection, are uncomfortably close to it as described.

Crossidius blandi Casey, 1893, An. N. Y. Acad. Sci. vii, 589.
Length 7.7-9.5 mm. = .30-.38 inch. *Habitat.*—Southwestern Utah.

This species may follow *discoideus*, to which it is closely allied in the table heretofore given. It is represented as differing from *discoideus* in its smaller size, narrower form, sparse punctuation, especially the thoracic, the absence of the two subapical black spots on the thorax, and the rounded and not truncate apices of the elytra.

The following species belong to the group of *Crossidius* with the thorax subtuberculate:

Crossidius longipennis Casey, 1891, An. N. Y. Acad. Sci. vi, 31.
Length 15-19 mm. = .60-.75 inch. *Habitat.*—New Mexico.

Described from four examples, and stated to be related to *intermedius* but larger, differing also by the punctuation finer and denser, the black legs and antennæ, and the truncate and angulate elytral apices.

Crossidius crassipes Casey, 1891, l. c. p. 32.
Length 14 mm. = .56 inch. *Habitat.*—Washington.

Described from a single male example as intermediate between *punctatus* and *intermedius*, having the black legs and antennæ of the former and the long slender antennæ of the latter, and differing from *intermedius* in the very long posterior tarsi, in which the second joint is nearly one-half longer than wide.

Crossidius nitidicollis Casey, 1891, An. N. Y. Acad. Sci. vi, 33.
Length 10.5-12.5 mm. = .50-.60 inch. *Habitat.*—Arizona (Tucson).

Described as allied to *pulchellus*, but differing in the larger and longer thorax, with the extremely slender and acute lateral prolongation of the basal angles more conspicuous; and by the characters in the synoptic table of the species in the group with rounded and semituberculate sides which is here reproduced.

Prothorax more or less strongly transverse, very densely, confluently punctured and densely pilose.

Antennæ of the male rather short, never much longer than the body, those of the female very short and stout, with the joints scarcely more than twice as long as wide.

Elytral punctuation very coarse, becoming finer towards apex, the punctures always distinctly separated **punctatus.**

Elytral punctuation finer, becoming extremely dense toward apex. **testaceus.**

Antennæ of the male very long and slender, much longer than the body, those of the female moderate in length, slender, with the joints three or four times as long as wide.

Antennæ and legs pale; posterior tarsi short and slender; elytral punctures coarse, always distinctly separated **intermedius.**

Antennæ and legs black, or piceous black; posterior tarsi longer and much stouter.

Elytral punctures fine and very dense, coarser toward base. **longipennis.**

Elytral punctures very coarse, nearly as in *punctatus*, but denser. **crassipes.**

Prothorax much less transverse, coarsely, deeply punctate and shining, the punctures all distinctly separated.

Antennæ of the male much longer than the body.

Elytra rather finely and very densely punctate, the elytral base and suture throughout black **hirtipes.**

Elytra very coarsely, sparsely punctate, with a narrow fusiform black area at the suture scarcely ever extending as far as basal fourth. **nitidicollis.**

Antennæ of the male much shorter, never notably longer than the body; elytral punctures very coarse toward base, the disc with a broad black sutural area, which is usually angulate anteriorly, sometimes attaining the base **pulchellus.**

Sphœnothecus rubens Casey, 1891, An. N. Y. Acad. Sci. vi, 34. This is a variety of SUTURALIS, in which the punctuation at the sides of the thorax and elytra becomes very fine and dense, but in many individuals this and *suturalis*, which is very variable in the coarseness or fineness and density of its punctuation, approximate. There are no primary structural characters by which the forms can be separated, and none of the secondary, as color or length of the antennæ are permanent. Both forms are abundant in southwestern Texas, New Mexico and Arizona.

Sphænothecus basalis Horn, 1894, Coleop. Baja Calif. (Proc. Cal. Acad. Sci. ser. 2, iv, 401).

Length 12–14 mm. = .48–.56 inch. *Habitat.*—Lower California.

Described as piceous black, moderately shining, a very small hair in each puncture of the dorsal surface, the base of elytra and femora

red, tibiæ and tarsi black, condiles of hind femora dentiform; thorax oval, narrower in front, disc convex, surface with coarse transverse punctures, median line smoother; elytra coarsely, irregularly punctate; apices acutely rounded, a small spine at the suture, a larger spine externally.

Stenosphenus longulus Casey, 1891, An. N. Y. Acad. Sci. vi, 34.
Length 10 mm. = .40 inch. *Habitat.*—Texas.

This species, described from a single male, is stated to differ from *lepidus* in having the pronotum in front of the coxæ strongly depressed and coarsely densely punctato-rugulose; in *lepidus* this space is divided by a polished longitudinal elevation, thus forming two depressed areas.

Xylotrechus gemellus Casey, 1893, An. N. Y. Acad. Sci. vii, 590.
Length 14–15 mm. = .54–.60 inch. *Habitat.*—Indiana.

Described from two examples and represented as differing from *undulatus* chiefly by the coarser sculpture of the pronotum, suffused pale pubescence extending across the base of the elytra and less prominent frontal carina; the transverse bands different in form, being wider and posteriorly arcuate at the point where, in *undulatus*, they are anteriorly angulate.

The individuals of *undulatus* vary greatly in coarseness or fineness of sculpture, in pubescence, and in distinctness of the elytral bands, and none of the differences mentioned by Mr. Casey seem of any value, unless it be the last mentioned.

Cyrtophorus insinuans Casey, 1893, An. N. Y. Acad. Sci. vii, 590. This is the male of *Microclytus gazellula*. The description was made from a unique taken in Ontario, Canada, with the statement that it only differed from *Microclytus gazellula* by having the third antennal joint briefly dentato-spinose.

The five males of that species before me all have rudimentay dentations at the apex of the third joint, and a little amplication of this most probably exists in Mr. Casey's unique.

The antennal characters of *Microclytus* in the "Classification" belong to the female; those of the male, then unknown, are the same as in *Cyrtophorus*, except in the less or non-development of the antennal spine.

Euderces exilis Casey, 1893, An. N. Y. Acad. Sci. vii. 591.
Length 4.25 mm. = .17 inch. *Habitat.*—Texas.

By description this species having a transverse ivory band on the elytra must be placed in the table with *reichei*, from which it differs by its greater robustness and spinose antennæ; and by the prothorax broader and more strongly and abruptly narrowed to base.

Agallissus chamæropis Horn, 1893, Tr. Am. Ent. Soc. xx, 138.
Length 19-21.5 mm. = .76-.85 inch. *Habitat.*—Florida (Biscayne Bay).

"Black, shining, elytra dull red with the suture piceous, thorax with four longitudinal lines of white pubescence. Head coarsely sparsely punctured at middle, eyes completely encircled with white recumbent pubescence, which extends along the sides of the front and crosses the edge of the clypeus. Thorax as wide as long, slightly narrowed in front, sides feebly arcuate, disc coarsely punctate, with four shallow longitudinal grooves extending from apex to base, the two inner grooves interrupted near the base, the grooves densely pitted with white recumbent pubescence; scutellum semicircular, black, glabrous. Elytra wider at base than the thorax, gradually arcuately narrowed to apex, apices rotundato-truncate, the sutural spine short, most distinct in the male, disc vaguely grooved on each side of suture, surface moderately coarsely, not closely punctate, each puncture with a short, semierect cinereous hair, color dull red, the suture gradually more widely piceous from the base, then more rapidly narrowing at the apical third. Body beneath black, shining, sparsely punctate; pro-pleuræ, sides of metasternum, outer edge of met-episterna, and a triangular spot at the sides of each ventral segment with white pubescence. Legs black, sparsely pubescent."

Agallissus gratus Hald., 1853 (*Cryptopleura*), Proc. Acad. Nat. Sci. Phil. vi, 363.

LeConte did not describe this species as he is credited with in all our lists.

NECYDALIS BARBARÆ Rivers, Ent. Amer. vi, 112, was described after Mr. Leng's synopsis of the genus was in press, but is included in a supplementary paper, l. c. p. 213.

Toxotus lateralis Casey, 1891, An. N. Y. Acad. Sci. vi, 37.
Length 13 mm. = .52 inch. *Habitat.*—California (near San Francisco).

Described as allied to *trivittatus*, but differing in its unusually long, stout and compressed antennæ; and as rather short and stout, moderately shining, with the body, legs and antennæ black, the abdomen rufo-testaceous, and the elytra with a pale narrow marginal vitta, which does not quite attain the apex.

Anthophilax subvittatus Casey, 1891, An. N. Y. Acad. Sci. vi, 37.
Length 9.3-11 mm. = .37-.44 inch. *Habitat.*—Colorado?

Described from five examples, probably males, and stated to be moderately robust, rather convex, piceous-black; legs and antennæ piceo-testaceous; elytra pale luteo-testaceous, with a broad common

sutural and narrow submarginal vitta of piceous-black, the vittæ generally feebly marked and sometimes evanescent; disc of thorax finely densely punctate and but feebly impressed along middle; disc of elytra coarsely and sparsely punctate toward base, gradually finer to apex and along suture.

Acmæops variipes Casey, 1891, An. N. Y. Acad. Sci. vi, 38.
Length 8-8.8 mm. = .32-.35 inch. *Habitat.*—California (Santa Cruz County).

Described from a single male as rather slender, strongly convex, shining, deep black; antennæ dark brown, the basal joint darker and blackish; anterior legs pale rufo-testaceous, the middle and hind femora slightly so near the coxæ; thorax coarsely densely punctate, with a narrow impunctate median line; disc of elytra coarsely not closely punctate, finer toward apex. Allied to *longicornis* and *basalis;* Mr. Casey, however, has not given characters by which it may be placed properly in the table.

STRANGALIA *montana* Casey, 1891, An. N. Y. Acad. Sci. vi, 40. This is synonymous with SEXNOTATA, which is quite variable in color of the legs and antennæ and in coarseness or fineness of the punctuation. The truncation of the female elytra at tip is relied on by Mr. Casey to separate it from *sexnotata,* but in a sufficiently large series, the tip will be seen to vary from acute to truncate, especially in Western examples.

Leptura spuria Lec. is the male of ACMÆOPS MILITARIS Lec.

Leptura exigua Newm. *saucia* Lec.

L. nana Newm. var. *hæmatites* Newm.

This synonymy was determined, by Dr. Geo. H. Horn, by comparison with Newman's types in the British Museum, Tr. Am. Ent. Soc. xv, 301.

Leptura gaurotoides Casey, 1893, An. N. Y. Acad. Sci. vii, 592.
Length 9.5 mm. = .38 inch. *Habitat.*—Utah (southwestern).

Described as broad nearly as in *Gaurotes,* convex, elytra feebly shining; body, legs and antennæ intense black; pubescence dark and inconspicuous; antennæ half the length of the body, stout, compact; prothorax of the outline of *instabilis;* scutellum broadly and transversely truncate; elytra strongly, evenly, not very densely punctate, tip rounded not truncate. To be placed in the table near *instabilis.*

Leptura serpentina Casey, 1891, An. N. Y. Acad. Sci. vi, 41.

This is a synonym of TRIBALTEATA Lec., which is variable in the form of the body, elytral ornamentation, and color of the antennæ.

Leptura haldemani Casey, 1891, An. N. Y. Acad. Sci. vi, 42.
Length 9-10.5 mm. = .36-.42 inch. *Habitat.*—New Mexico.

Described as slender and rather convex, the body intensely black; legs, antennæ and elytral humeri red; moderately shining; pubescence sparse and inconspicuous; antennæ (male) nearly as long as the body; thorax much longer than wide, like that of *sanguinea;* disc extremely densely punctate; elytra not coarsely nor densely punctate, narrowly truncate at tip. May be placed in the table near *sanguinea.*

Leptura lacustris Casey, 1891, An. N. Y. Acad. Sci. vi, 43.
Length 7.8-9 mm. (female); 9-11 mm. = .36-.44 inch. (male) = .31-.36 inch. *Habitat.*—Michigan (Marquette).

Described as having the body, legs and antennæ entirely black, the elytra pale brownish testaceous, sometimes feebly infuscate toward the apex; moderately shining; pubescence moderately long very short on the elytra. The males are larger than the females and the sexual differences throughout the body unusually well marked. Allied to *sanguinea* Lec., but differs in the much stouter male antennæ and in the truncation of the elytra being not broad and strait, but narrow, oblique and deeply sinuate, nearly as in *canadensis.*

OPHISTOMIS Thoms.

This genus is only separable from *Leptura* by the head being prolonged into a beak. It is represented in our fauna by two species.

O. lævicollis Bates, 1880, Biol. Cent. Amer. Col. v, p. 39.
Length *Habitat.*—Arizona, Oaxaca to Panama.

O. ventralis Horn, 1894, Proc. Cal. Acad. Sci. ser. 2, iv, 401.
Length 11-12 mm. = .42-.47 inch. *Habitat.*—Southern California, Lower California (El Taste).

"Slender; head black, closely punctate; thorax red or black, conical, longer than wide at base, apex constricted, sides compressed behind the middle, disc very convex, very sparsely and finely punctate, hind angles not explanate. Elytra wider at base than the thorax, humeri prominent, sides obliquely narrowing, apex obliquely emarginate-truncate, the angles acute, disc coarsely and deeply, not regularly punctate, punctures finer toward apex. Pro- and mesosternum black. Metasternum and abdomen red, very sparsely finely punctate, not pubescent. Legs black, the underside of hind femora at base usually red. The vestiture of the upperside consists of very short black hairs arising from the punctures. Allied to *rufiventris* Bates from Nicaragua, but differs in its almost smooth thorax." "Horn."

The synopsis of the Cerambycidæ, now brought to a close, was commenced in 1884, and published from time to time, in parts, as follows:

Bulletin of the Brooklyn Ent. Soc. vol. vii, pp. 7–11.—*Ergates* to *Orthosoma*.
" " " " " 57–64.—*Prionus* to *Criocephalus*.
" " " " " 64.—One plate with 11 figures.
" " " " " 95–101.—*Tetropium* to *Merium*.
" " " " " 112–119.—*Callidium* to *Stromatium*.
Entomologica Americana, vol. i, pp. 28–35.—*Gnaphalodes* to *Aneflus*.
" " " 35.—Two plates, thirty-one figures.
" " " 130–136.—*Romaleum* to *Curius*.
" " " 136.—One plate, twenty figures.
" vol. ii, pp. 27–32.—*Obriini* to *Evadna*.
" " " 60–63.—*Callichroma* to *Crioprosopus*.
" " " 63.—Two plates, 28 figures.
" " " 81–83.—*Tragidion* to *Amanuus*.
" " " 102–103.—*Batyle* to *Oxoplus*.
" " " 118–120.—*Schizax* to *Perarthrus*.
" " " 193–200.—*Ischnocnemis* to *Xylotrechus*.
" vol. iii, pp. 4–8.—*Xylotrechus* to *Clytanthus*.
" " " 23–24.—*Clytanthus* to *Euderces*.
" " " 44.—*Euderces*.
" vol. vi, pp. 9–13.—*Agallissus* to *Encyclops*.
" " " 65–69.—*Rhagium* to *Toxotus*.
" " " 97–98.—*Pachyta* to *Anthophilax*.
" " " 104–110.—*Acmæops* to *Piodes*.
" " " 156–160.—*Gaurotes* to *Typocerus*.
" " " 185–200.—*Leptura*.
" " " 213–215.—*Euryptera* and notes.

CONCLUDING NOTES.

Cœnopœus niger Horn, 1894, Coleop. Baja Cal. (Proc. Cal. Acad. Sci. ser. 2, iv, 402).

Length 17–19 mm. = .67–.75 inch. *Habitat.*—Lower California (Sierra El Chinche, at 2000 feet).

"Of the form of *palmeri*, but differing in the coarser and closer elytral punctuation, and in the absence of any ornamentation by pubescence either above or beneath."

"Black, shining, the pubescence excessively fine, short, black; antennæ black, joints three to seven annulate with white; front sparsely punctate; thorax broader than long, angulate at the middle, sides in front oblique, behind the angulation forming a cylindrical constriction, surface with coarse punctures along the apex and base, very few at middle; elytra coarsely, closely and deeply punctate, near the apex much smoother; body beneath extremely finely pubescent. Described from two females and have the last ventral slightly emarginate as in *palmeri*." Horn.

This species was accidentally omitted from its proper place.

Acanthoderes wickhami. This seems to be the species described by Dr. Horn under the name *Peritapnia fabra*, of which Mr. Leng was not cognizant till both were in press, who suggests that the latter genus might be placed among the Acanthoderini.

Peritapnia nudicornis Bates (*Tapeina?*), Biol. Cent. Am. vol. v, 421. Horn, Baja Cal. (Proc. Cal. Acad. Sci. ser. 2, vol. iv. 340 and 403).

Length . *Habitat.*—Lower California (Sierra El Chinehe at 2000 feet); Mexico (Oaxaca).

This species is made the type of the genus by Dr. Horn, who separates the species thus:

"Piceous black, moderately shining, muricate punctures of elytra irregularly placed **nudicornis.**

Brown, dull, more convex, muricate punctures regularly and evenly placed. **fabra.**

The coxæ are rather more widely separated in the former. In the males of both species the anterior femur is slightly angulate on the underside one-third from the base and with a small brush of short hairs. The females have a slight fovea in the last ventral segment, while that of the male is plain." Horn.

Systematists are undecided as to the true position of this genus as well as that of *Tapeina.*

Lepiostylus parvus, argentatus and *aculifer;* examples of these species have recently been seen, which were taken by Mrs. Slosson at Lake Worth, Florida, the latter species having the elytral tubercles pubescent, as in *argentatus.*

Liopus alpha: add to the synonymy *cinereus* Lec. l. c.

The Lamiinide division of our Cerambycidæ now contains 162 species in 54 genera. That of Europe including Caucasus and Russian Armenia, 254 species in 31 genera, nine of which occur in our fauna, namely: *Monohammus, Acanthoderes, Acanthocinus, Liopus, Hoplosia, Pogonocherus, Saperda, Tetrops* and *Oberea;* omitting *Acanthocinus* and *Hoplosia,* the same genera are common to Siberia, which contains 102 species in 25 genera, as the genera now stand.

CORRIGENDA.

Page 103, line 27, 29. 44 *read* Michthisomini, MICHTHISOMA, *Michthisoma.*
" 104, " 32, for Gen. *read* Captain.
" 106, " 41, for Acan. *read* Arcan.
" 108, " 27, for **Dorchas.** *read* **Dorcas.**
" 110, " 18, for **DORCHAS.** *read* **DORCAS.**
" 113, " 4, for synopsis *read* synopses.
" 113, " 13, for Lagochier. *read* Lagocheir.
" 134. " 36, for baswood *read* basswood.
" 142, " 26, for **APORTAX.** *read* **APORATAX.**
" 144, " 11, for *Melothia* read *Melothria.*
" 149, " 28, for *Cretægus* read *Cratægus.*

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